

CT  
BOOK 793-19 PAGE 113

S.N.#4

COMMONWEALTH OF MASSACHUSETTS

TOWN OF AMESBURY

ESSEX, ss.

ORDER OF TAKING

At a meeting of the Board of Selectmen of the Town of Amesbury held this day of September, 1985, it is ordered:

The Board of Selectmen of the Town of Amesbury, duly elected, qualified, and acting as such, on behalf of the Town and by virtue of and in accordance with the authority of the vote under Article 51 of the warrant of the Adjourned Town Meeting legally called and held on May 14, 1985, and of the provisions of Chapter 40, §14 of the General Laws, as amended, and of any and every other power and authority us hereunto in any way enabling, do hereby take in fee simple absolute on behalf of the Town, to be managed and controlled by the Conservation Commission of the Town of Amesbury, the following described parcels of land situated in said Town:

A certain parcel shown on Assessors Map 47 as Lots 7, 9, 10 and 11 located between Lake Gardner and South Hampton Road.

Said parcel is taken for the purpose of conservation and passive recreation.

Any and all trees and structures upon the land hereby taken are specifically included in this taking.

We determine that damages are sustained by the person whose property is taken by this Order as shown on Schedule A, annexed hereto and made a part hereof, and we accordingly award said damages.

MS OCT-8 P 2 N 3

# 430

IN WITNESS WHEREFORE, we, the duly elected and qualified  
Selectmen of the Town of Amesbury, have hereunto set our hands  
this      day of September, 1985.

SELECTMEN OF THE TOWN OF AMESBURY

*John A. Martini*, Chairman

*James W. B.*

*James W. Thiering*

*R. Joseph B. Thiering*

*William S. B.*

COMMONWEALTH OF MASSACHUSETTS

September 9 , 1985

ESSEX, ss.

Then personally appeared the above named

Selectmen of the Town of Amesbury, and acknowledged the foregoing  
instrument to be their free act and deed, before me,

*Sally G. Fall*  
Notary Public

My Commission Expires: 8/19/90



BOOK 7949 PAGE 115

SCHEDULE A

<u>LOTS</u>	<u>NAME AND ADDRESS</u>	<u>BOOK &amp; PAGE</u>	<u>APPROX. AREA TAKEN</u>	<u>DAMAGES</u>
7,9,10,11	Andover River Trust 9 Donald Circle Andover, Mass. 01810	Book 7943 Page 193-194	+ - 85.27A.	\$625,000.00

14

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DIVISION OF CONSERVATION SERVICES  
SELF-HELP PROGRAM  
PROGRAM AGREEMENT

Made this Twenty-fourth Day of December, 1984

between the Town of Amesbury

Hereinafter referred to as the PARTICIPANT, and the Commonwealth of Massachusetts acting by and through the Secretary of the Executive Office of Environmental Affairs, hereinafter referred to as the COMMONWEALTH.

WHEREAS, the PARTICIPANT has established a Conservation Commission under Mass. G.L. c. 40 s. 8C and has made application to the COMMONWEALTH for assistance under the Massachusetts Self-Help Program, so-called under Mass. G.L. c. 132A s. 11, as it may be amended, for a project briefly described as follows: (describe project and include description of property). S.H. #4; this project will consist of the acquisition of 86 + acres of land known as the Ardon Corp. Property by the Amesbury Conservation Commission.

. Hereinafter the PROJECT. WHEREAS, the COMMONWEALTH has reviewed said application and found the PROJECT to be in conformance with the purposes of Mass. G.L. c. 132A s. 11 (and any other relevant statutes or state program).

WHEREAS, the COMMONWEALTH has approved said application and has obligated certain funds in the amount of Four hundred thousand dollars  
( \$400,000.00 ).

Publication # 11171-4-250-1-79-CR  
Approved by Alfred C. Holland, State  
Purchasing Agent

REC'D DEC 26 2 14 PM '84  
# 220

511-6466,  
2/24/72

Administration & Development  
Town Hall  
Amesbury Ma. 01913

RECEIVED  
18876  
MAY 1972

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DIVISION OF CONSERVATION SERVICES  
SELF-HELP PROGRAM  
AMENDMENT TO PROJECT AGREEMENT

The project agreement made 12/24/84 py between the  
Commonwealth of Massachusetts and Town of Amesbury  
in order to accomplish the objectives of the Self-Help Program as  
established by Massachusetts General Laws Chapter 132A, Section 11, is  
hereby amended as follows:

S.H. #4, Ardon Corp. Property

Change fund amount from \$400,000.00 to \$500,000.00

In all other respects, the agreement of which this is an amendment shall  
remain in full force and effect. In witness whereof the parties hereto  
have executed this amendment as of the date entered below.

The PARTICIPANT agrees to record a copy of this amendment at the  
appropriate Registry of Deeds as an adjunct to the deed for land comprising  
the property and the original project agreement.

COMMONWEALTH OF MASSACHUSETTS

By James Harte  
Secretary, Executive Office of  
Environmental Affairs

PARTICIPANT

AMESBURY

By [Signature]  
Chief Executive Officer

CONSERVATION COMMISSION

By [Signature]  
[Signature]  
[Signature]  
[Signature]  
[Signature]

DATE 5/8/85

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DIVISION OF CONSERVATION SERVICES  
SELF-HELP PROGRAM  
PROGRAM AGREEMENT

Made this Twenty-fourth Day of December, 1984

between the Town of Amesbury

Hereinafter referred to as the PARTICIPANT, and the Commonwealth of Massachusetts acting by and through the Secretary of the Executive Office of Environmental Affairs, hereinafter referred to as the COMMONWEALTH.

WHEREAS, the PARTICIPANT has established a Conservation Commission under Mass. G.L. c. 40 s. 8C and has made application to the COMMONWEALTH for assistance under the Massachusetts Self-Help Program, so-called under Mass. G.L. c. 132A s. 11, as it may be amended, for a project briefly described as follows: (describe project and include description of property). S.H. #4; this project will consist of the acquisition of 86 + acres of land known as the Ardon Corp. Property by the Amesbury Conservation Commission.

, Hereinafter the PROJECT. WHEREAS, the COMMONWEALTH has reviewed said application and found the PROJECT to be in conformance with the purposes of Mass. G.L. c. 132A s. 11 (and any other relevant statutes or state program).

WHEREAS, the COMMONWEALTH has approved said application and has obligated certain funds in the amount of Four hundred thousand dollars (\$ 400,000.00 ).

Publication # 11171-4-250-1-79-CR  
Approved by Alfred C. Holland, State  
Purchasing Agent

1. WITNESSETH: the COMMONWEALTH and the PARTICIPANT mutually agree to perform this agreement in accordance with the Massachusetts Self-Help Program, so-called, and Mass. G.L. c. 132A s. 11, and c. 40 s. 8C.
2. The PARTICIPANT agrees to perform the PROJECT described above by authorizing its CONSERVATION COMMISSION to manage, maintain and operate the PROJECT in accordance with the terms of and the obligations contained in the PARTICIPANT'S preliminary and final applications and any other promises, conditions, plans, specifications, estimates, procedures, project proposals, maps and assurances made a part thereof, and with any special terms and conditions attached hereto, all of which are incorporated by reference. All significant deviations from the PROJECT shall be submitted to the COMMONWEALTH for prior approval.
3. The PARTICIPANT agrees that the facilities of the PROJECT shall be open to the general public and shall not be limited to residents of the PARTICIPANT. The PARTICIPANT shall prominently display on the PROJECT a sign designated by the COMMONWEALTH indicating the PROJECT received Self-Help Funds.
4. The PARTICIPANT acknowledges Article 97 of the Massachusetts Constitution which states, in part, that: "Lands and easements taken or acquired for such (conservation) purposes shall not be used for other purposes or otherwise disposed of except by laws enacted by a two-thirds vote, taken by yeas and nays of each branch of the general court." The PARTICIPANT hereby that any property or facilities



comprising the PROJECT will not be used for purposes other than those stipulated herein or otherwise disposed of, unless the PARTICIPANT receives the appropriate authorization from the General Court, the approval of the Secretary of Environmental Affairs, and any authorization required by the provisions of Mass. G.L. c. 41, s. 15A.

5. The PARTICIPANT further agrees that despite any such authorization and approval, in the event the property or facilities comprising the PROJECT are used for purposes other than those described herein, the PARTICIPANT shall provide other property and facilities of equal value and utility to be available to the general public for conservation and recreational purposes provided that the equal value and utility and the proposed use of said other property and facilities is specifically agreed to by the Secretary of Environmental Affairs.
6. Failure by the PARTICIPANT to comply with this PROJECT agreement may, at the option of the COMMONWEALTH, suspend or terminate all obligations of the COMMONWEALTH hereunder.
7. Finally, since the benefit desired by the COMMONWEALTH from the full compliance by the PARTICIPANT is the existence, protection and the net increase of conservation lands and public outdoor facilities which have been preserved in their natural state insofar as is practicable and because such benefit exceeds to an immeasurable and unascertainable extent the amount granted by this agreement, the PARTICIPANT agrees that payment by the PARTICIPANT to the COMMONWEALTH of money would be an inadequate remedy for a breach by the PARTICIPANT

of this agreement, and agrees therefor that, as an alternative or an additional remedy, specific performance of the PARTICIPANT'S obligation under either Article 2 or Article 5 may be enforced by the COMMONWEALTH.

8. The PARTICIPANT agrees to record a copy of this agreement at the Northern Essex Registry of Deeds at the same time the deed for land comprising the PROJECT is recorded.

COMMONWEALTH OF MASSACHUSETTS

BY James Thorne  
Secretary, Executive Office of  
Environmental Affairs

PARTICIPANT

BY William J. Hall  
Chief Executive Officer

CONSERVATION COMMISSION

BY James Woodson  
Phillip Haines  
Linda Reiffe  
Robert Eaton

Attached hereto evidence of authority to execute this contract on behalf of the PARTICIPANT: In the case of a municipality, a certified copy of the vote or votes of the governing body authorizing the PROJECT, appropriating the municipality's funds therefor, and authorizing execution of this Agreement by the Officer, Board, or Commission whose signature (s) appears above.

AMESBURY

S. H.

#4

2488



Town Clerk

S.H. #4

# Amesbury

Town Hall, Amesbury, MA 01913  
Tel. 388-0622

May 22, 1985

At an adjourned meeting of the inhabitants of the Town of Amesbury duly called and held May 14, 1985 in the Amesbury Town Hall, under warrant signed by the Board of Selectmen, notification of which was duly given by posting as required by law and Bylaws of the Town of Amesbury at which a quorum was present (98 Town Meeting Members ) Article 51 read as follows:

Article 51. To see if the Town will vote to raise and appropriate, take from available funds, issue notes or bonds, or any combination of the aforementioned, the sum up to Five Hundred Thousand Dollars (\$500,000.00) for the acquisition or taking by eminent domain of property shown on Map 47, Lots 7, 9, 10, 11 located between Lake Gardner and South Hampton Road, the reimbursement from the State up to Four Hundred Thousand Dollars (\$400,000.00) be restored, upon receipt to the Town Treasury, or take any other action relative thereto.

Finance Committee recommends adoption and that \$100,000.00 be raised and appropriated and that \$400,000.00 be borrowed through notes and bonds.

Planning Board recommends adoption.

Motion by Rosemary Cashman, seconded by Howard Dalton to authorize the Selectmen to purchase, take by eminent domain or otherwise acquire the property located between Lake Gardner and South Hampton Road, shown on Assessors Map 47 as Lots 7, 9, 10 and 11 to be managed and controlled by the Conservation Commission of the Town of Amesbury; and for said purpose to raise and appropriate the sum of One Hundred Twenty-five Thousand Dollars (\$125,000.00) and to borrow the sum of Five Hundred Thousand Dollars (\$500,000.00), the reimbursement from the State up to Five Hundred Thousand Dollars (\$500,000.00) be restored, upon receipt to the Town Treasury.

VOTED Yes 82 No 2

I hereby certify that the above is a true copy of Article 51 of the Adjourned Town Meeting held May 14, 1985 and also the action taken on same at the Adjourned Town Meeting held in the Amesbury Town Hall, Amesbury, MA.

Witness my hand and Seal of the Town of Amesbury this twenty-second day of May 1985.

  
Town Clerk



MICHAEL S. DUKAKIS  
GOVERNOR

JAMES S. HOYTE  
SECRETARY

*The Commonwealth of Massachusetts*  
*Executive Office of Environmental Affairs*  
*100 Cambridge Street*  
*Boston, Massachusetts 02202*

JAN 18 1985

Amesbury Conservation Commission  
Town Hall  
Amesbury, MA 01913

RE: Ardon Corp. Property, S.H. #4  
Omni Realty Trust, S.H. #5

Gentlemen:

I am pleased to inform you that Amesbury's Self-Help applications have been approved for funding. The amount of money being obligated to your projects is indicated below:

Self-Help #4	\$400,000.00
#5	\$ 99,200.00

In my review to determine the public benefit of your applications, I have weighed the open space aspects of your projects with other state agency concerns including affirmative action issues as required by 301 CMR 50.00, Affirmative Action Regulations and with housing issues required by Executive Order No. 215, Disbursement of State Development Assistance.

The Massachusetts Commission Against Discrimination and the Executive Office of Communities & Development have advised me that Amesbury is in compliance with Executive Office of Environmental Affairs Affirmative Action Regulations and is not unduly restricting housing growth.

Please note that the Massachusetts Historical Commission has indicated that the properties possess a high potential for the presence of previously unidentified archaeological sites.

Should your commission contemplate any land alterations in the future may I suggest you consult with your local historical commission and with the Massachusetts Historical Commission before proceeding.

Finally, for your information and action I am forwarding two copies of each of the Self-Help Project Agreements together with our billing instructions and forms for claiming your reimbursements. Kindly note the agreements must be recorded along with the deeds to the properties and copies thereof forwarded along with your billings.

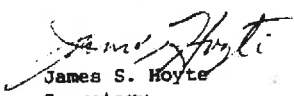
This approval is further conditioned, however, upon the following:

1. The submission of the third review appraisal certification;
2. The completion of a survey plan of both properties;
3. The development of a land use and management plan for both properties showing the connection to the Lake Gardner Beach.
4. Project completion and close-out by June 30, 1985.

Let me take this opportunity to commend your commission for under-taking these fine acquisitions. Once again the quality of this year's municipal conservation projects has been outstanding and I congratulate you and your community for these farsighted conservation efforts.

Should you have any questions regarding our program or procedures please do not hesitate to contact my Division of Conservation Services.

Sincerely,

  
James S. Hoyte  
Secretary

JSH/jd

Enclosures

cc: Board of Selectmen  
Massachusetts Commission Against Discrimination  
Executive Office of Communities & Development  
Massachusetts Historical Commission  
Dept. of Food & Agriculture, Div. of Land Use  
Merrimack River Watershed Council  
Frank Colombo

DIVISION OF CONSERVATION SERVICES  
SELF-HELP CONSERVATION PROGRAM  
M.G.L. CHAPTER 132A, SECTION 11  
FIELD INSPECTION REPORT

Conservation Commission AMESBURY Self-Help # 4  
Project Name Arden Corporation Property Acres 86  
Project Cost \$500,000 Comments \_\_\_\_\_  
Public Accessibility Rating (1-5) 2  
Access available from South Hampton Street St./Rd. \_\_\_\_\_

Findings:

YES NO

1. \* X Does project abut other public or quasi-public lands?
2. X \* Does project conform with open space plan?
3. \*X Will project protect a water resource?
4. \*X Is the area threatened in any way?
5. \*X Will a unique feature be protected?
6. \*X Does project provide for multiple uses of the land?
7. \* X Does the site have any known historical or archaeological significance?
8. \*X Will buildings be involved?

\*Explain in narrative addressing below.

9. Narrative addressing: a) Land Characteristics including location, past and present uses of the site; b) Reservation of Rights, if any c) Proposed Use(s) and/or reason for purchase; d) Suitability of site for proposed uses(s); e) Features that detract from area.

RECEIVED

6011000

DIVISION OF  
CONSERVATION SERVICES

10. Attach U.S.G.S. tracing of project area and preliminary project rating.

Inspector C. J. Colander Date 11/15/84  
Accompanied by T. Haskell Title Office of Community Development

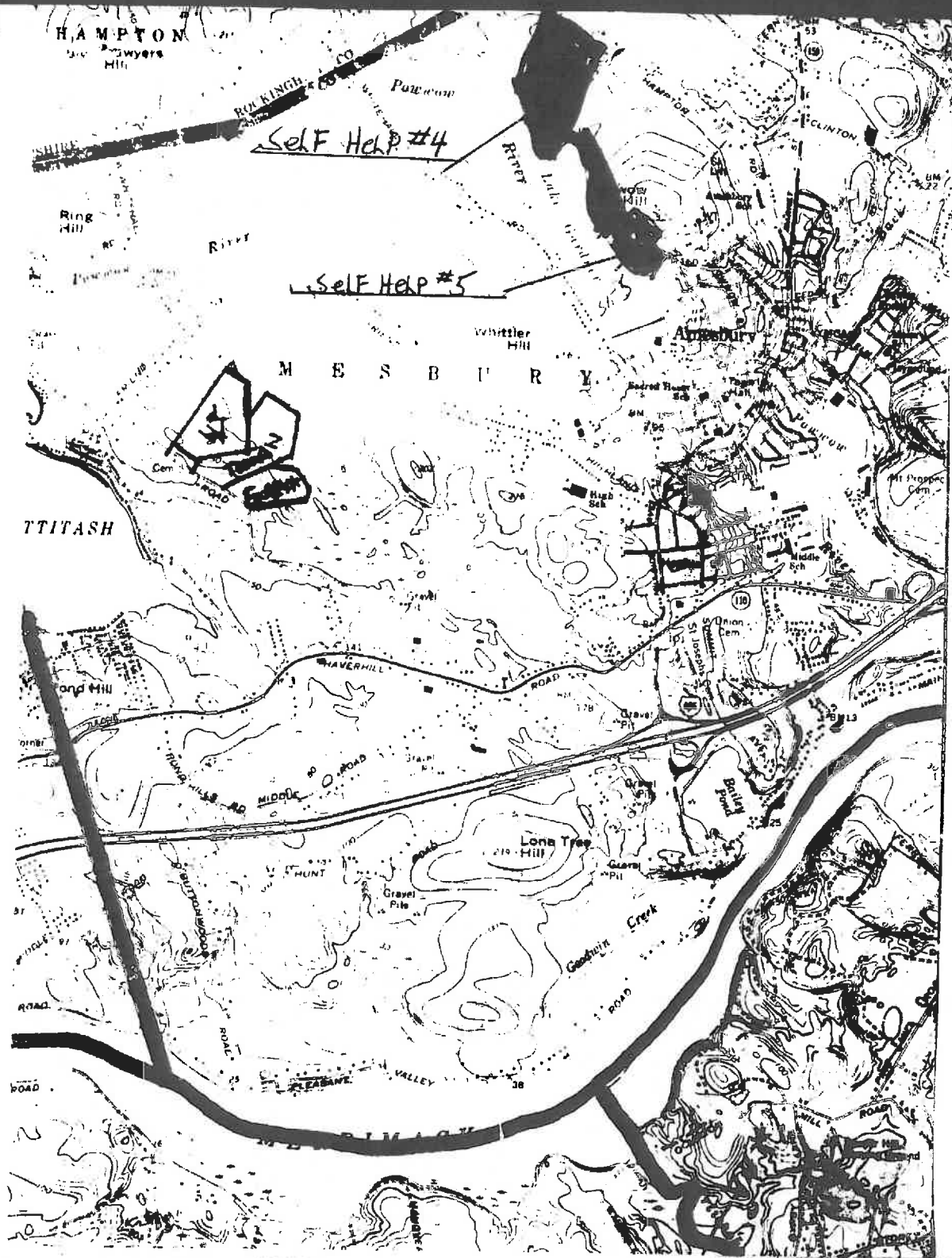
AMESBURY, SELF-HELP #4  
Ardon Corporation Property  
86 Acres  
Estimated Cost: \$500,000

---

This property is located in the northerly section of town near the New Hampshire line and approximately one half mile from the center of town. It borders on the easterly side of Lake Gardner with approximately 1000 ft. of shore frontage. Access and frontage is available at South Hampton Street.

The easterly portion, approximately 56 acres, are open fields and at one time was in agricultural use. Presently they are open unmanaged fields. It can be assumed that these fields have not been in use for several years, as some succession has taken place. The land is hilly and slopes westerly to the shoreline of Lake Gardner. Woodlands form the borders of these fields. With mature woodlands located along the lake and on the southerly section. Approximately 30 acres being forested. Condition of and types of soils are being and are in the process of being researched at this time. The farm is not under Chapter 61A or Chapter 61. The zoning of this area is classified as rural residential and could be developed. This could cause an environmental impact on Lake Gardner. The retention of this land and its open areas along with adjacent farm lands should be preserved. Further studies should be made as to re-use of the acquisition to maintain it in agricultural use. The old barn on the property, in my opinion, has no value and restoration, if possible, should be looked into or otherwise removed. It is important to note that the town has also applied through SH#5 for the acquisition of an additional 27.2 acres south of and contiguous to this property along the shoreline of Lake Gardner.





TITLE OF TRACT

MUNICIPALITY

5-1-4  
(to be assigned)

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DIVISION OF CONSERVATION SERVICES  
SELF-HELP CONSERVATION PROGRAM  
CHAPTER 132A, SECTION 11

APPLICATION FORM

RECEIVED

AUG 27 1984

1. MUNICIPALITY: Town of Amesbury DATE: August 27, 1984
2. LOCATION OF PROPERTY: (Indicate geographic locus in community, etc.)  
The eastern shore of Lake Gardner
3. DOES PROPERTY ADJUT ANY OTHER PUBLIC OR QUASI-PUBLIC LAND(S)?  
Yes            No x  
If "Yes" size of property and ownership  

<u>Size (Acres)</u>	<u>Ownership</u>
4. PRESENT OWNER OF THE PROPERTY TO BE ACQUIRED:
 

<u>Ardon Corporation</u>	<u>36 Spring Street</u>
<u>Name</u>	<u>Address</u>
	<u>Danvers, Mass. 01923</u>
- ASSESSORS SHEET NUMBER: 47 LOT NUMBER: 7,9,10,11
5. TOTAL ACRES TO BE ACQUIRED: 86+ PROPOSED COST: \$500,000.00  
 APPRAISED VALUES: 1) \$476,000.00 2) \$542,000.00
6. COVER, Acres in:
 

A. Forest <u>30 acres</u>	B. Open <u>56+ acres</u>
C. Wetland <u>          </u>	D. Water <u>          </u>
	E. Agricultural Land <u>          </u>
7. TOPOGRAPHY, Acres in:
 

A. Flat <u>          </u>	B. Hilly <u>          </u>
C. Rolling <u>          </u>	D. Mountain <u>          </u>
8. WATERFRONT, Linear Feet on:
 

A. Ocean <u>          </u>	B. Lake <u>3870+ feet</u>
C. River <u>          </u>	D. Stream <u>          </u>
9. PRESENT USE OF THE PROPERTY: Unused at this time
10. ARE THERE ANY BUILDINGS OR STRUCTURES ON PROPERTY? Yes x No             
 If "Yes", how many, estimated value and current use: A barn in very poor condition with no value to present property.

Revised 10/77

11. BRIEFLY DESCRIBE PROPERTY NOTING ANY UNIQUE FEATURES:

The property is located within 1/2 mile of Amesbury's downtown area. It is located on the side of the hill over looking Lake Gardner. The westerly side has been developed both with single family residences and with condominiums and apartments. The easterly side has remained in its natural state. The area represents one of the last tracts of open space located in close proximity to the downtown. The land extends along the side of Powow Hill, which is also under consideration for acquisition. Boundry of the land proceeds further northwest to the edge of the Town's line to South Hampton, New Hampshire. Acquisition of this property would result in the preservation of 1000 feet, the amount of lake frontage in the Town of Amesbury.

12. IS PROPERTY ACCESSIBLE BY PUBLIC TRANSPORTATION?

Yes \_\_\_\_\_ No ☒

If "Yes", estimate walking distance: \_\_\_\_\_

13. DOES PROPERTY HAVE FRONTAGE ON A STREET(S)? Yes ☒ No \_\_\_\_\_

If "Yes", name of street(s) South Hampton Road

(On plot plan (Attachment #3) please indicate access point(s))

14. INDICATE ANY CURRENT OR PROPOSED RESTRICTION ON PROPERTY: (Zoning Restrictions, Deed Restrictions, Conservation Restrictions, Rights of Way)

R-30 (Rural Residence) Present zoning classification

15. IS A CLEAR TITLE AVAILABLE? Yes \_\_\_\_\_ No \_\_\_\_\_ Unknown ☒

16. IS ACQUISITION BY: EMINENT DOMAIN \_\_\_\_\_ FRIENDLY NEGOTIATION ☒

PARTIAL GIFT \_\_\_\_\_ OTHER \_\_\_\_\_

17. DOES PROJECT HAVE TOWN MEETING OR CITY COUNCIL APPROVAL? Yes ☒ No \_\_\_\_\_  
(Attach copy of vote or proposed article)

18. IS THE TOWN APPLYING TO ANY OTHER AGENCY FOR ACQUISITION FUNDS? Yes \_\_\_\_\_ No ☒

If "Yes", what agency \_\_\_\_\_

19. DESCRIBE PURPOSE OF ACQUISITION AND PROPOSED USE: For conservation and passive

recreational use.

20. DESCRIBE HOW THE ACQUISITION FITS INTO THE COMMUNITY PLAN, OR CONSERVATION/RECREATION PLAN (✓ 2 Pages): Page 5. Recreation use of Powow Hill. Page 68 - Goals: Identify areas of critical environmental concern, regulate development of unique natural areas, improve and maintain local areas of scenic beauty; continue to work with other municipal and private groups to insure the attainment of common goals; improve the Lake Gardner Beach area; examine future options for acquisition of agricultural, recreational or open space land.

21. PROPOSED DURATION OF PROJECT: FROM \_\_\_\_\_ TO \_\_\_\_\_

22. SIGNATURE OF ALL CONSERVATION COMMISSION MEMBERS:

CHAIRMAN: <u>Thornton Lallier</u>	ADDRESS: <u>Powow Hill Rd</u>
<u>James A. Woodman</u>	<u>Livingston Rd.</u>
<u>Robert W. Hughes III</u>	<u>Newton Rd. Kings Corner</u>
<u>Richard L. Brown</u>	<u>396 Main St</u>

23. COMMISSION MEMBER FAMILIAR WITH PROPOSAL THAT DIVISION PERSONNEL SHALL CONTACT FOR FIELD EXAMINATION OF PROPERTY:

<u>Thornton Lallier</u>	<u>Central St</u>	<u>St. Paul, N.H.</u>
Name	Address	Business or Daytime Phone Number
		<u>248-2661</u>

#### REQUIRED ATTACHMENTS

1. Certified copy, by city or town clerk, of date of acceptance of General Laws, Chapter 40, Section 8C.
2. Certified copy, by city or town clerk, of present appointments of conservation commission.
3. Appraisals and/or opinions of value as required by Division of Conservation Services.
4. Community Comprehensive Open Space-Recreation Plan to be included if not already on file with Executive Office of Environmental Affairs. This plan must not be more than five years old and must meet Division of Conservation Services planning requirements.
5. Plot plan on map showing total area to be acquired. Show current use of adjacent lands. If contiguous lands are under public ownership identify agency and management.

IT IS TO BE UNDERSTOOD THAT ANY PROPERTY ACQUIRED WHICH RECEIVES SELF-HELP REIMBURSEMENT ASSISTANCE IS OPEN TO ALL CITIZENS OF THE COMMONWEALTH, AND THAT NO MAJOR ALTERATION OF THIS PROPERTY, OR CHANGES IN THE PROPOSED USES CAN TAKE PLACE WITHOUT THE PRIOR APPROVAL OF THE EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS, AND POSSIBLY THE GENERAL COURT.

IT IS NECESSARY FOR THE EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS TO HAVE ALL OF THE ABOVE MATERIAL. FAILURE TO ANSWER ALL QUESTIONS AND SUBMIT THE SUPPORTING DATA WILL RESULT IN THE APPLICATION BEING RETURNED AS INCOMPLETE.



Town Clerk

# Amesbury

Town Hall, Amesbury, MA 01913  
Tel. 388-0622

August 21, 1984

At an Annual Meeting of the inhabitants of the Town of Amesbury duly called and held on March 19, 1962 in the Amesbury Town Hall, under warrant signed by the Board of Selectmen, notification of which was duly given by posting as required by law and bylaws of the Town of Amesbury at which a quorum was present, Article 53 read as follows:

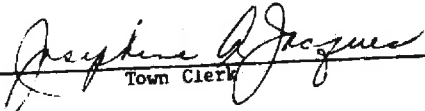
Article 53. To see if the Town will vote to accept Section 8C of Chapter 40 of the General Laws which is a section establishing a Conservation Commission to promote the development of Natural Resources.

Finance Committee recommends adoption.

Motion by Albert J. Roy, Seconded by Walter M. Hellen that the recommendation of the Finance Committee be adopted.  
VOTED.

I hereby certify that the above is a true copy of Article 53 of the Annual Town Meeting held March 19, 1962 and also the action taken on same at the Annual Town Meeting held in the Amesbury Town Hall, Amesbury, MA.

Witness my hand and Seal of the Town of Amesbury this twenty-first day of August, 1984.

  
Town Clerk

Municipality AMEXBY SH# 4  
Project Name Arden Corp. Property  
Acreage 86+ Cost \$500,000

Smithington Rd  
Porter R. 30100

Preliminary Application Received

8/31/84

Appraisals  
Plot Plan  
Chap. 40, 8C  
ConCom certification  
Conservation Plan

☒  
☒  
☒  
☒  
☒

\$476,000

Nursery Assoc.

more than 10%  
380 cont. of value  
+ 615,000  
+ 542,000  
Ruth  
None 625,000  
511,000 x 2  
400,000 650,000

Field Examination Received

10-18-84

Permission to Proceed Granted

Preliminary Application Approved

12/24/84

Amount

\$400,000  
500,000

Final Application Received

12/23/85

Copy of Deed/Order of Take

☒

625,000

Certification of Title

☒

Survey

Municipal Vote

☒

get copy enter before study committee

Statement of Payment 625,000

☒

3/22/86

Self-Help Contract

☒

not recorded copies

SIGN

☒

11/86

Invoice Prepared

Payment Made

Survey  
Land use / management plan - incorporate into Search unit grant public  
SCS/C.D. soils report plan for use?  
Fed + Reg. / Memorandum WA



Town Clerk

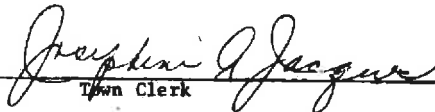
# Amesbury

Town Hall, Amesbury, MA 01913  
Tel. 388-0622

August 21, 1984

This is to certify that the following are members of the Amesbury  
Conservation Commission:

Jean Gosselin, 13 Perkins St.  
James Forest, 9 Merrill St.  
Robert A. Eaton, Newton Rd.  
Thornton Lallier, 7 Rocky Hill Rd.  
James A. Woodson, Friend St.  
Richard W. Teeven, 396 Main St.  
Dallas Haines, Newton Rd.

  
Town Clerk



Town Clerk

# Amesbury

Town Hall, Amesbury, MA 01913  
Tel. 388-0622

August 27, 1984

At a meeting of the inhabitants of the Town of Amesbury duly called and held November 14, 1983 in the Amesbury Town Hall, under warrant signed by the Board of Selectmen, notification of which was duly given by posting as required by law and bylaws of the Town of Amesbury at which a quorum was present (90 Town Meeting Members), Article 7 read as follows:


Article 7. To see if the Town will vote to authorize and direct the Selectmen to appoint a committee consisting of three residents, said committee to investigate the desirability of the purchase or taking by the town of land on the east side of Lake Gardner for park, recreational, forest or environmental protection purposes, and the Selectmen be authorized upon receipt of the report of the said committee to execute the necessary agreements for purchase or taking of said land subject to the approval of the Town Meeting.

Finance Committee recommends adoption.  
Planning Board recommends adoption.

Motion by Andrew Benson, seconded by William Lord for adoption of the article ending at the word purposes. (To see if the town will vote to authorize and direct the Selectmen to appoint a committee consisting of three residents, said committee to investigate the desirability of the purchase or taking by the town of land on the east side of Lake Gardner for park, recreational, forest or environmental protection purposes.)  
VOTED.

I hereby certify that the above is a true copy of Article 7 of the Town Meeting of November 14, 1983 and also the action taken on same at the Town Meeting held in the Town Hall, Amesbury, MA.

Witness my hand and Seal of the Town of Amesbury this twenty-seventh day of August, 1984.

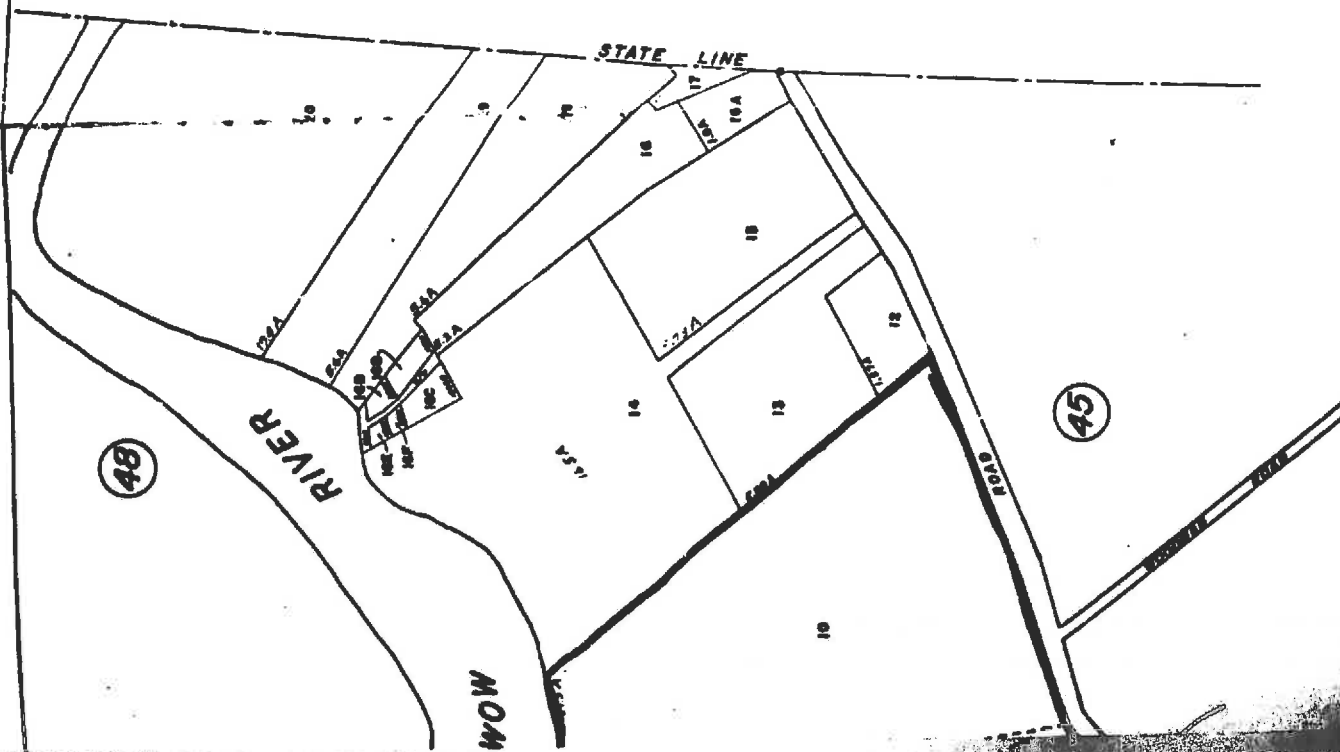
  
Town Clerk

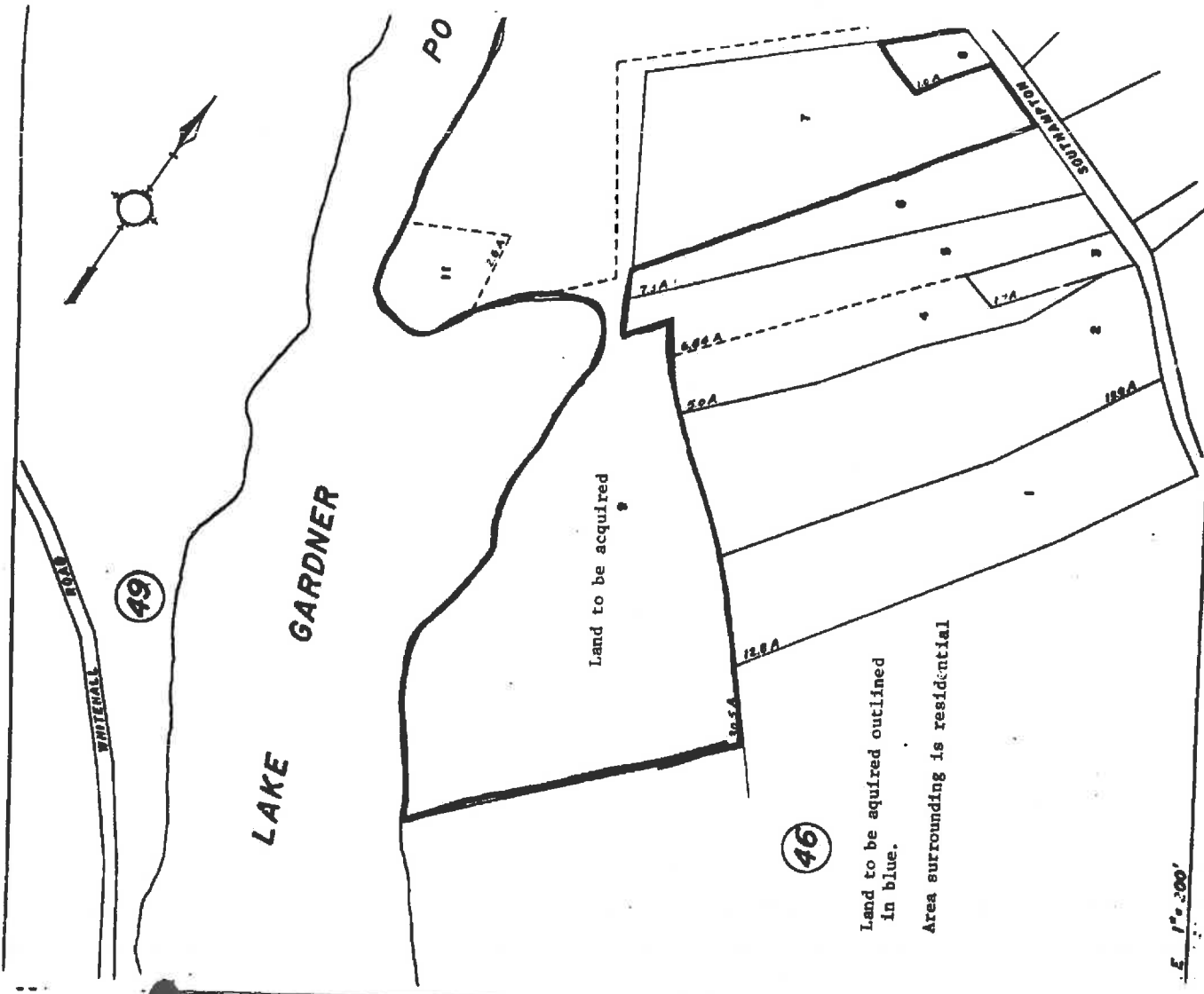


NEW HAMPSHIRE

47

STATE LINE





46

Land to be acquired outlined in blue.  
Area surrounding is residential

1/2 mile

Soil and Water Conservation Plan

Town of Amesbury

Lake Gardner Land

December 1985

## Index

### I. Soil and Water Conservation Plan

### II. Appendix

1. Locus Map
2. Conservation Plan Map
3. Soil Survey
  - A. Index Map
  - B. Soil Survey Map
  - C. Soil Survey Legends
  - D. Soil Descriptions
  - E. Soil Classifications
  - F. Agricultural Capability Descriptions
  - G. Woodland Suitability Groups
4. Wildlife Pachtet
  - A. Invite the Birds to your Home
  - B. Cut Back Borders for Wildlife
  - C. How to Plant Wildlife Shrubs
  - D. Attracting Songbirds with Nesting Boxes
  - E. Brush Piles for Wildlife
5. Trails
  - A. Planning and Constructing Trails
6. Hayland Management System
  - A. Hayland Planting  
Hayland Management



United States  
Department of  
Agriculture

Soil  
Conservation  
Service

225 Great Road

P. O. Box 147

Littleton, MA 01460

Tel. (617) 486-3032

December 27, 1985

Soil and Water Conservation Plan

Town of Amesbury

Lake Gardner Land

December 1985

Through the Essex Conservation District, the Town of Amesbury requested assistance from the Soil Conservation Service in developing a management plan for recently acquired land on the east bank of Lake Gardner. This 120 acre plot was purchased with state self-help and local funds. The Locus map (example I) indicates the geographic location of the Lake Gardner land.

The Amesbury open space and recreation plan 1982 identifies the goals which will be partially fulfilled with the acquisition of this property.

- I. Protection and enhancement of natural resources (objective #3),  
regulate development of unique natural areas.



The Soil Conservation Service  
is an agency of the  
Department of Agriculture

II. Provision of recreational facilities. Objective #6, examine future options for acquisition of agricultural and recreational and open space land.

Located on the east side of Lake Gardner this parcel of land consists of open fields once farmed, and a wooded hillside facing the lake. It is the intent of the development commission to lease the fields to a neighboring farmer to produce hay. They also wish to provide the citizens of Amesbury with opportunities for passive recreation such as hiking, cross-country skiing, nature study and fishing. Some of the open land could be used for community gardens or for growing christmas trees under a long term lease. Allowing people to cut fire wood in the woodland is another possibility.

Vegetation in the abandoned fields consists of annual and perennial weeds growing in corn stubble. The fields are bordered by woody shrubs which provide food and cover for wildlife. The woodland is made up of coniferous and mixed deciduous hardwoods in various stages of growth.

Soils on the open land consist of well drained sandy loam with some silty soils at lower elevations. Most of the slopes in the open areas are moderate.

The soils in the wooded areas are also well drained but are very stony and are on steep slopes. Some seeps and wet spots occur at the lower elevations.

The following is a list of conservation practices used to treat the land which will be applied by the leaser or the Conservation Commission.

#### Havland

##### Havland planting

Fields - 1, 3, 4, 5, 16Ac, 8.5Ac, 12.5, 14A. - Good forage consists of a dense stand of adapted grasses and legumes which produce high yields of quality feed. Forage crops are to be seeded in the early spring or late summer. In establishing a good stand follow these recommendations. To the extent practicable the area to be seeded should be cleared of brush trees and stones, and smoothed to permit the operation of farm machinery. Have the soil tested for lime and fertilizer needs. Prepare seed bed by plowing, harrowing and dragging or use conservation tillage procedures. Fertilizer and lime will be applied according to the results of the soil test. Seed in the spring before June 1 or between August 1 and Sept. 15.

##### Havland Management

Fields - 1, 3, 4, 5, 15Ac, 8.5, 12.5, 14. - Apply lime and fertilizer in accordance with the most current edition of the Massachusetts agronomy guide or most recent soil test.

##### Brush Control

Fields - 1, 3, 4, 5. - The brush competing with the forage should be

supressed or eliminated by mechanical or chemical methods. (Note - be aware of the Massachusetts pesticide laws dealing with herbicides.)

#### Wildlife Habitat Management

Field - 2 - The swale between field 1 and 3 is to be managed as a wildlife area. It is to be confined to approximately 100 feet in width. The shrub border around field 3 and 5 are to be part of this management area. This area can be improved by additional plantings of wildlife food and cover shrubs. Cutback borders and brush piles can also be added. See the information contained in the appendix in the wildlife packet.

#### Trail System - (all fields)

The existing trail system crosses open fields and covers much of the woodland area. In some wooded areas the slopes approach 40% and in other areas the trail is impassable due to wetness. The trail is to be relocated to the edge of the fields or into the wildlife area. In wooded areas the trail is to be redirected so as to reduce the slope. In wet areas gravel and culverts should be used. See the enclosed job sheet "Planning and Constructing Trails".



SELF-HELP PROJECT SELECTION SCORE SHEET

Municipality \_\_\_\_\_ SH# \_\_\_\_\_

Demographic Factors (50)

- |   |      |       |
|---|------|-------|
| 1.) Population Density                            | (10) | _____ |
| 2.) Percent of Households<br>Below Poverty Level  | (10) | _____ |
| 3.) Median Income for<br>Families and Unrel. Ind. | (10) | _____ |
| 4.) Equalized Valuation<br>Per Capita             | (10) | _____ |
| 5.) Project-Specific Demo-<br>graphic Factors     |      |       |
| a.) Project accessibility<br>by Public Transp.    | (5)  | _____ |
| b.) Project service to<br>Population Centers      | (5)  | _____ |

Town/City Points \_\_\_\_\_

Project Quality Characteristics

- |   |      |       |
|---|------|-------|
| 1.) Project Consistency with<br>Local Open Space Plan                   | (10) | _____ |
| 2.) Protection of Water Resources                                       | (10) | _____ |
| 3.) Protection of Unique Natural,<br>Historical or Cultural<br>Features | (8)  | _____ |
| 4.) Provision of Multiple Uses  | (7)  | _____ |
| 5.) Protection of Wildlife Resources                                    | (5)  | _____ |
| 6.) Intergovernmental Effort  | (10) | _____ |

Project Points \_\_\_\_\_

Total Points \_\_\_\_\_

## Woodland

### Woodland Management

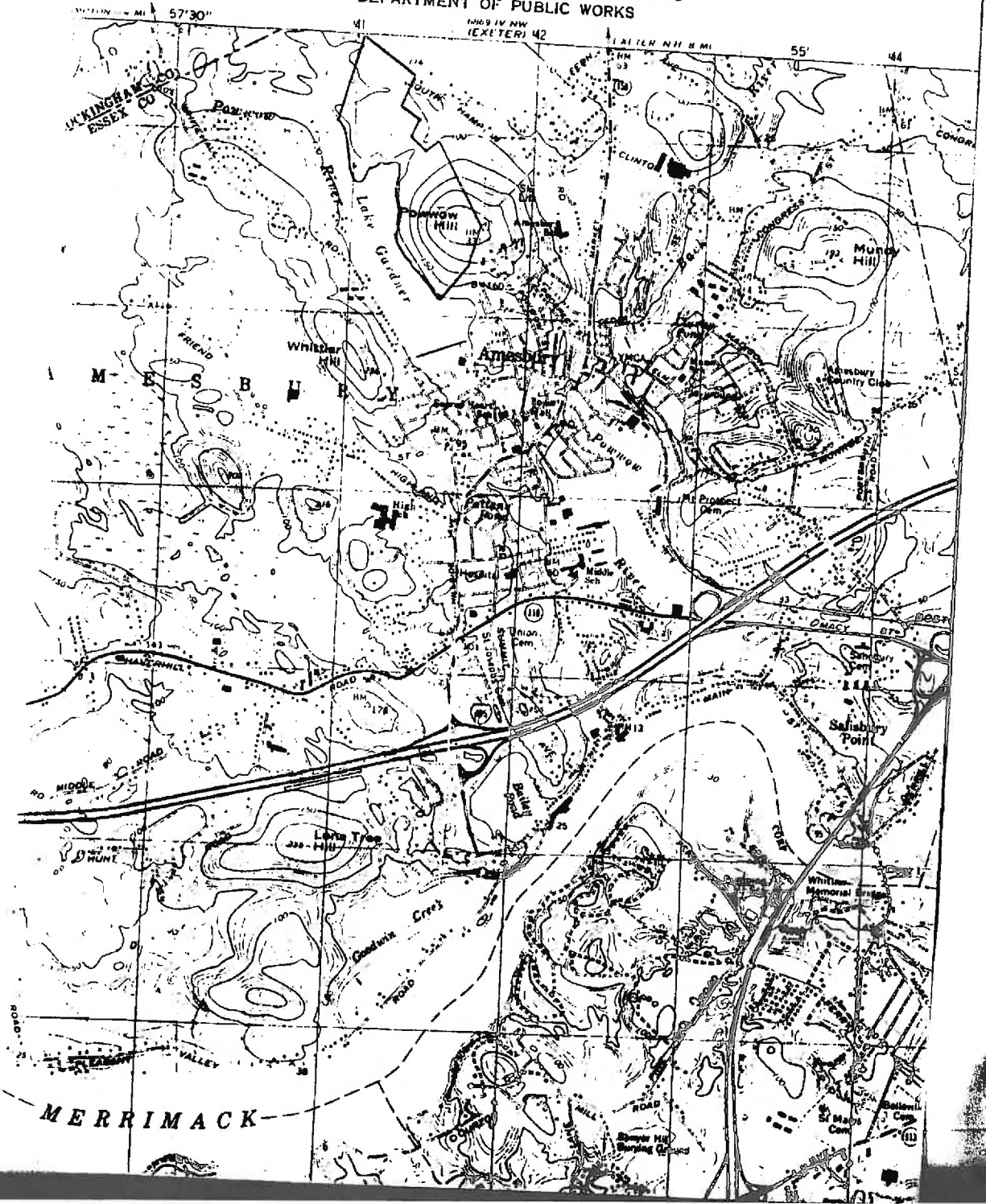
6 - 65Ac - This 65 acres parcel of woodland is on the west side of Pow Wow Hill bordering Lake Gardner. The summit is 241 feet above the lake and offers views of the ocean to the east and the surrounding country side to the south. Additional clearing would broaden these vistas.

This woodland area consists of several woodland types. Individual species consists of pole size pitch pine, white pine red oak, back oak, hickory ash, maple beech, cedar and aspen. Also existing and thriving are less desirable species such as bull brier and a large area of poison ivy.

The county forester has looked at the property and is prepared to offer limited assistance on woodland management. He has indicated that there is a need for management practices such as weeding and thinning which could result in a sale of wood products such as cord wood, saw logs or wood chips. No woodland work should be undertaken without consulting with the district forester.



COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF PUBLIC WORKS



SCS-CONS-16  
OCTOBER 1974

# CONSERVATION PLAN MAP

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Owner TOWN OF AMESBURY Operator \_\_\_\_\_  
County ESSEX State MASS  
Approximate acres 119 Approximate scale 1" = 660' Date 12/85  
Cooperating with \_\_\_\_\_ Conservation District \_\_\_\_\_  
Plan identification \_\_\_\_\_  
Assisted by CHARLES B. CONLIN Photo number \_\_\_\_\_  
USDA Soil Conservation Service



Included with this soil in mapping are small areas of Deerfield and Wareham soils that make up about 15 percent of this map unit.

The permeability of this soil is very rapid. Available water capacity is very low. In unlimed areas the soil is strongly acid to extremely acid. The rooting zone extends into the substratum.

Most areas of this soil are in woodland. A few areas are farmed, and some are used for residential and urban development.

This soil is suited to cultivated crops, hay, and pasture, but it is droughty. The erosion hazard is slight. The main management needs include irrigation, frequent applications of fertilizer, and cover crops.

Slope and the sandy texture limit this soil for recreational development. The soil is poorly suited to trees and wildlife habitat.

The soil is generally suitable for residential development. The sides of shallow excavations are unstable. Establishing lawns is usually difficult because of droughtiness. The soil has few limitations for septic tank filter fields, but the very rapid permeability is a limitation for most other types of waste disposal facilities.

This unit is in capability subclass IVs.

**CmB—Charlton fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, well drained soil is mostly in rectangular areas on the lower slopes of hills and ridges. The areas range from 5 to 20 acres. Slopes are typically smooth and convex and range from 100 to 400 feet long.

Typically, the surface layer is very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton soils and Charlton soils with slopes of 0 to 3 percent. Included soils make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Most areas of this soil are used for residential development. Some previously cleared areas have reverted to or been planted to trees. Most of the acreage of the soil has been farmed, and some areas still are farmed.

This soil is well suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderate. Where this soil is farmed, strip cropping, minimum tillage, and use of cover crops and grasses and legumes in the cropping system help reduce runoff and erosion and increase organic matter content. Use of proper stocking rates and de-

ferred grazing helps maintain desirable pasture plant species.

The soil is generally suitable for recreational and residential development, but slope is a limitation for playgrounds and the moderate or moderately rapid permeability limits use for sanitary landfills. The soil is also suitable for trees and for openland and woodland wildlife habitat.

This unit is in capability subclass IIe.

**CmC—Charlton fine sandy loam, 8 to 15 percent slopes.** This deep, moderately sloping, well drained soil is mostly in rectangular areas on the lower slopes of hills and ridges. The areas range from 5 to 20 acres. Slopes are typically smooth and convex and are 100 to 400 feet long.

Typically, the surface layer is very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton and Canton soils that make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Many areas of this soil are in residential development. Some of the previously cleared areas have reverted to or been planted to trees. Most areas of the soil have been farmed, and some areas still are farmed.

This soil is suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderately severe. Where this soil is farmed, strip cropping, terracing, minimum tillage, and use of cover crops and grasses and legumes in the cropping system help reduce runoff and erosion and increase organic matter content. Mixing crop residue and manure into the surface layer improves tilth and also increases the organic matter content of this soil. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

Slope limits the soil for most types of recreational and residential development, and the moderate or moderately rapid permeability limits use for most types of waste disposal facilities. The soil is suitable for trees and for openland and woodland wildlife habitat.

This unit is in capability subclass IIe.

**CmD—Charlton fine sandy loam, 15 to 25 percent slopes.** This deep, moderately steep, well drained soil is mostly in rectangular and irregularly shaped areas on the lower slopes of hills and ridges. The areas range from 5

to 20 acres. Slopes are typically smooth and convex and are 100 to 400 feet long.

Typically, the surface layer is very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton and Canton soils that make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Some of the previously cleared areas of this soil have reverted to or been planted to trees, and some are in residential development. Most areas of the soil have been farmed, and a few areas still are farmed.

This soil is suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderately severe. Where this soil is farmed, stripcropping, terracing, minimum tillage, and use of cover crops and grasses and legumes in the cropping system help reduce runoff and erosion and increase organic matter content. Mixing crop residue and manure into the surface layer improves tilth and also increases the organic matter content of this soil. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

Slope limits use of the soil for most types of recreational and residential development and for most waste disposal facilities. The moderate or moderately rapid permeability is also a limitation for waste disposal facilities. The soil is suitable for trees and woodland wildlife habitat.

This unit is in capability subclass IVe.

**CoB—Charlton very stony fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, well drained soil is in irregularly shaped areas on lower slopes of hills and ridges. The areas range from 15 to 100 acres and are covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart. Slopes are typically smooth and convex and are 100 to 600 feet long.

Typically, the surface layer is very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton soils and areas with stones 10 to 30 feet apart on the surface. Included soils make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Most areas of this soil are in woodland, and a few are used for pasture. Some areas are in residential development.

The stones on the surface make this soil poorly suited to cultivated crops. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The stones on the surface limit the soil for most types of recreational and residential development except for picnic areas. The moderate or moderately rapid permeability limits use of the soil for most types of waste disposal facilities. The soil is suitable for trees and woodland wildlife habitat.

This unit is in capability subclass VIg.

**CoC—Charlton very stony fine sandy loam, 8 to 15 percent slopes.** This deep, moderately sloping, well drained soil is in irregularly shaped areas on lower slopes of hills and ridges. The areas range from 20 to 100 acres. Slopes are smooth and convex and are 200 to 500 feet long. The surface is covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart.

Typically, the surface layer is very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 15 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton and Canton soils and areas with stones 10 to 30 feet apart on the surface. Included areas make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Most areas of this soil are in woodland. A few areas are used for pasture, and some are in residential development.

Slope and the stones on the surface limit the soil for cultivated crops and for recreational and residential development. The moderate or moderately rapid permeability limits use of the soil as a site for waste disposal facilities. In areas used for pasture the use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable plant species.

The soil is suitable for trees and woodland wildlife habitat.

This unit is in capability subclass VIg.

**CoD—Charlton very stony fine sandy loam, 15 to 25 percent slopes.** This deep, moderately steep, well

drained soil is in irregularly shaped areas on lower slopes of hills and ridges. The areas range from 20 to 50 acres. Slopes are smooth and convex and are typically 100 to 500 feet long. The surface is covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart.

Typically, the surface layer is very friable, dark brown fine sandy loam about 3 inches thick. The subsoil is friable, brown fine sandy loam in the upper 6 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 13 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Sutton and Canton soils and a few areas with stones 10 to 30 feet apart on the surface. Included areas make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid, and available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum.

Most areas of this soil are in woodland. A few areas are used for pasture, and some are in residential development.

Slope and the stones on the surface limit the soil for cultivated crops and for recreational and residential development. The slope and moderate or moderately rapid permeability limit use of the soil as a site for waste disposal facilities. In areas used for pasture the use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable plant species.

The soil is suitable for trees and woodland wildlife habitat.

This unit is in capability subclass VIc.

**CrB—Charlton-Rock outcrop-Hollis complex, 3 to 8 percent slopes.** This unit consists of well drained, deep Charlton soils, exposed bedrock, and somewhat excessively drained, shallow Hollis soils on ridges and hills. Slopes are complex and 50 to 400 feet long. The surface is covered by stones 1 to 3 feet in diameter and areas of Rock outcrop that are 30 to 100 feet apart. The areas consist of approximately 60 percent Charlton soils, 15 percent Rock outcrop, 10 percent Hollis soils, and 15 percent other soils. The soils and exposed bedrock in this unit are so intermingled that it was not practical to map them separately.

Typically, the Charlton soils have a surface layer of very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Typically, the Hollis soils have a surface layer of friable, very dark brown fine sandy loam about 5 inches thick. The subsoil is friable fine sandy loam that is brown in the upper 5 inches and dark yellowish brown in the

lower 6 inches. Hard granite bedrock is at a depth of inches.

Included with this complex in mapping are small areas of Woodbridge and Ridgebury soils and areas with exposed bedrock and stones are more than 100 feet apart.

Permeability is moderate or moderately rapid in Charlton and Hollis soils. Available water capacity moderate in the Charlton soils and very low in the Hollis soils. The rooting zone extends into the substratum in the Charlton soils and to bedrock in the Hollis soils. Reaction is very strongly acid to medium acid in both soils.

Most areas of these soils are in woodland. Some areas are in residential and urban development.

Exposed bedrock and stones on the surface make these soils poorly suited to farming and limit their use for recreational development other than picnic areas. The shallow depth to bedrock in the Hollis soils limits use for playgrounds.

The shallow depth to bedrock, stones on the surface, and moderate or moderately rapid permeability limit use of the soils for residential development and as a site for waste disposal facilities.

The Charlton soils are suitable for trees and woodland wildlife habitat, and the Hollis soils are poorly suited for these uses.

This unit is in capability subclass VIc.

**CrC—Charlton-Rock outcrop-Hollis complex, 8 to 15 percent slopes.** This unit consists of well drained, deep Charlton soils, exposed bedrock, and some shallow, excessively drained, shallow Hollis soils on ridges and hills. Slopes are complex and 50 to 400 feet long. The surface is covered by stones 1 to 3 feet in diameter and areas of Rock outcrop that are 30 to 100 feet apart. The areas consist of approximately 60 percent Charlton soils, 15 percent Rock outcrop, 10 percent Hollis soils, and 15 percent other soils. The soils and exposed bedrock in this unit are so intermingled that it was not practical to map them separately.

Typically, the Charlton soils have a surface layer of very friable, dark brown fine sandy loam about 4 inches thick. The subsoil is friable, brown fine sandy loam in the upper 7 inches and friable, dark yellowish brown gravelly fine sandy loam in the lower 17 inches. The substratum is friable, olive brown gravelly fine sandy loam to a depth of 60 inches or more.

Typically, the Hollis soils have a surface layer of friable, very dark brown fine sandy loam about 5 inches thick. The subsoil is friable fine sandy loam that is brown in the upper 5 inches and dark yellowish brown in the lower 6 inches. Hard granite bedrock is at a depth of inches.

Included with this complex in mapping are small areas of Woodbridge and Ridgebury soils and areas with e



soils and the moderately rapid permeability in the substratum of the Leicester soils are additional limitations for waste disposal facilities.

This unit is in capability subclass VII.

**RIB—Ridgebury and Leicester extremely stony fine sandy loams, 3 to 8 percent slopes.** These deep, gently sloping, poorly drained soils are in depressions and along drainageways. Slopes are smooth and concave. The soils are in oval and long and narrow areas that generally range from 5 to 50 acres. The surface of the areas is covered by stones 1 to 3 feet in diameter that are 10 to 100 feet apart. Some areas of these soils are dominantly Ridgebury soils, some are dominantly Leicester soils, and some are both. The soils were mapped together because they have no major differences in use and management. The mapped acreage of this unit is about 50 percent Ridgebury soils, 35 percent Leicester soils, and 15 percent other soils.

Typically, the Ridgebury soils have a surface layer of friable, very dark brown fine sandy loam about 5 inches thick. The subsoil is mottled, firm, olive gray fine sandy loam about 13 inches thick. The substratum is mottled, firm, olive and olive brown fine sandy loam to a depth of 60 inches or more.

Typically, the Leicester soils have a surface layer of friable, very dark gray fine sandy loam about 5 inches thick. The subsoil is mottled, friable, olive and olive gray fine sandy loam 23 inches thick. The substratum is mottled, firm, olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with these soils in mapping are areas of Woodbridge, Sutton, and Whitman soils. Also included are a few areas of soils with slopes of 8 to 15 percent.

Permeability is moderate to moderately rapid in the subsoil of both these soils. It is slow or very slow in the substratum of the Ridgebury soils and moderately rapid in the substratum of the Leicester soils. Available water capacity is low in the Ridgebury soils and moderate in the Leicester soils. Reaction ranges from very strongly acid to medium acid in the Ridgebury soils and very strongly acid or strongly acid in the Leicester soils. The rooting zone extends to the substratum in the Ridgebury soils and into the substratum in the Leicester soils, but root growth is restricted by a seasonal high water table which is at or near the surface in winter and spring.

These soils are suitable for trees and woodland wildlife habitat, and most areas are in woodland and shrubs. The seasonal high water table and stones on the surface make the soils poorly suited to farming and limit recreational development.

The seasonal high water table and stones on the surface also limit the soil for residential development and as a site for waste disposal facilities. The slow or very slow permeability in the substratum of the Ridgebury soils and the moderately rapid permeability in the substratum of

the Leicester soils are additional limitations for waste disposal facilities.

This unit is in capability subclass VII.

**RnC—Rock outcrop-Buxton complex, 3 to 15 percent slopes.** This complex consists of areas of exposed bedrock and undulating and rolling, moderately well drained soils in irregularly shaped areas along the major streams in the survey area. The areas of exposed bedrock are less than 50 feet apart. The areas of the complex range from 5 to 40 acres, and most have stones and boulders on the surface. Slopes range from 100 to 400 feet long. The soils and exposed bedrock are so intermingled that it was not practical to map them separately. The complex is about 50 percent Rock outcrop, 35 percent Buxton soils, and 15 percent other soils.

Typically, the Buxton soils have a surface layer of friable, very dark grayish brown silt loam about 4 inches thick. The subsoil is 26 inches thick. It is friable, light olive brown silt loam in the upper 18 inches and firm, mottled, light olive brown silty clay loam in the lower 8 inches. The substratum is firm, mottled, light yellowish brown silty clay to a depth of 60 inches or more.

Included with this complex in mapping are small areas of Suffield and Scantic soils.

The permeability of the Buxton soils is moderately slow in the subsoil and slow in the substratum. Available water capacity is high. Reaction of the soil is strongly acid to slightly acid in the subsoil and medium acid to neutral in the substratum. The rooting zone extends through the subsoil, but root growth is restricted by a seasonal high water table which is in the lower part of the subsoil during winter and early spring.

Most areas of this complex are in woodland, and the complex is suitable for trees and woodland wildlife habitat. The areas of exposed bedrock interfere with timber harvesting equipment. The exposed bedrock and the stones on the surface make the complex poorly suited to farming and limit recreational development.

A few areas of the complex are used for residential development, but the complex is limited for this use and for waste disposal facilities by the areas of exposed bedrock, the seasonal high water table, and a susceptibility to frost action.

This unit is in capability subclass VII.

**RnD—Rock outcrop-Buxton complex, 15 to 25 percent slopes.** This complex consists of areas of exposed bedrock and moderately steep, moderately well drained soils in irregularly shaped areas along the major streams in the survey area. The areas of exposed bedrock are less than 50 feet apart. The areas of the complex range from 5 to 40 acres, and most have stones and boulders on the surface. Slopes range from 100 to 400 feet long. The soils and exposed bedrock are so intermingled that it was not practical to map them separately. The com-



moderate in the Charlton soils and very low in the Hollis soils. Reaction is very strongly acid to medium acid in both. The rooting zone extends into the substratum in the Charlton soils and to the bedrock in the Hollis soils.

Most areas of this complex are wooded. The Charlton soils are suitable for trees and woodland wildlife habitat, but the Hollis soils are poorly suited to these uses.

The areas of exposed bedrock, the stones on the surface, and slope make this complex poorly suited to farming and are the main limitations for recreational development.

The complex is limited for residential development and as a site for waste disposal facilities by the shallow depth to bedrock of the Hollis soils, the stones on the surface, slope, and the moderately rapid or rapid permeability of the soils.

This unit is in capability subclass VIIc.

**Rx—Rock outcrop-Hollis complex.** This complex consists of exposed bedrock and somewhat excessively drained, shallow, nearly level to steep Hollis soils on ridges and hills. The areas are irregularly shaped and range from 10 to 50 acres. Slopes are 40 to 500 feet long and range from 0 to 40 percent. The areas of exposed bedrock are mainly less than 10 feet apart, and stones are scattered on the surface of some areas of the complex. The complex consists of about 65 percent Rock outcrop, 20 percent Hollis soils, and 15 percent other soils. The soils and exposed rock are so intermingled that it was not practical to map them separately.

Typically, the Hollis soils have a surface layer of friable, very dark brown fine sandy loam about 5 inches thick. The subsoil is friable, brown and dark yellowish brown fine sandy loam 11 inches thick. Hard granite is at a depth of 16 inches.

Included with this complex in mapping are small areas of well drained soils that have bedrock between depths of 20 and 40 inches in some places and between depths of 2 and 8 inches in others.

The permeability of the Hollis soils is moderate or moderately rapid. Available water capacity is very low, and reaction ranges from very strongly acid to medium acid. The rooting zone extends to the bedrock.

Most areas of this unit are a mixture of bare rocks and woodland. The numerous bedrock exposures and shallow depth to bedrock limit this complex for most uses other than for esthetic value and some types of recreation.

This unit is in capability subclass VIIIc.

**Sa—Saco Variant silt loam.** This deep, nearly level, very poorly drained soil is on flood plains. Areas of this soil are irregular in shape or crescent shaped and range from 5 to 30 acres. These areas are near stream level and are commonly flooded at least once in 2 years.

Typically, the surface layer is friable, very dark gray silt loam about 5 inches thick. The substratum extends to a

depth of 60 inches or more. It is mottled, friable, gray silt loam to a depth of 20 inches; loose, dark gray loamy fine sand to a depth of 30 inches; and very friable, gray fine sand and sand and thin layers of very dark grayish brown muck at a depth of more than 30 inches.

Included with this soil in mapping are small areas of Limerick and Rumney soils and Medisapists, shallow. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate in the upper part of the substratum and rapid in the lower part. Available water capacity is high. Reaction ranges from very strongly acid to medium acid in the upper part of the substratum and medium acid or slightly acid in the lower part. The rooting zone is primarily in the surface layer, and root growth is restricted by a seasonal high water table which is at or near the surface during most of the year.

Most areas of this soil are covered with water-tolerant weeds, sedges, grasses, and shrubs.

The hazard of flooding and the seasonal high water table make this soil poorly suited to farming and are major limitations for most uses except as wetland wildlife habitat. A high susceptibility to frost action is an additional limitation for residential development.

This unit is in capability subclass VIw.

**ScA—Scantic silt loam, 0 to 3 percent slopes.** This deep, nearly level, poorly drained soil is in depressions and along drainageways. The areas are irregular in shape and elongated and mainly range from 5 to 30 acres. Slopes are smooth and concave and are 100 to 400 feet long.

Typically, the surface layer is friable, dark grayish brown silt loam 6 inches thick. The subsurface layer is friable, mottled, grayish brown silt loam 5 inches thick. The subsoil is 15 inches thick and is mottled throughout. The upper 3 inches is firm, light gray silt loam; the lower 12 inches is firm, light gray and gray silty clay loam. The substratum is very firm, gray, mottled clay to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Buxton and Maybird soils that make up about 15 percent of this map unit.

The permeability of this soil is slow or very slow. Available water capacity is high. Reaction ranges from strongly acid to neutral in the subsoil and medium acid to neutral in the substratum. The rooting zone extends into the subsoil, but root growth is restricted by a seasonal high water table which is within 12 inches of the surface in winter and spring.

Most areas of this soil are covered with grass or are in woodland, but the soil is poorly suited to tree production.

This soil is suited to cultivated crops, hay, and pasture. The seasonal high water table is the main limitation for these uses, and drainage is difficult because of the slow or very slow permeability and a lack of outlets. The use

deferred grazing, and pasture rotation help maintain desirable pasture plant species.

This soil is suitable for trees and woodland wildlife habitat, but the stones on the surface and the slow permeability of the substratum limit the soil for most recreational uses other than picnic areas.

The soil is limited for residential development and as a site for waste disposal facilities by the slow permeability of the substratum, the seasonal perched water table, and a susceptibility to frost action.

This unit is in capability subclass Vis.

**ShC—Scituate very stony fine sandy loam, 8 to 15 percent slopes.** This deep, moderately sloping, moderately well drained soil is mainly on the sides of drumlins and ridges. The areas are irregular in shape and range from 10 to 40 acres. Slopes are smooth or rolling, are slightly concave, and are 200 to 500 feet long. The surface is covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart.

Typically, the surface layer is very friable, very dark grayish brown fine sandy loam about 4 inches thick. The subsoil is fine sandy loam 24 inches thick. It is very friable and yellowish brown in the upper 11 inches and is friable and mottled light olive brown in the lower 13 inches. The substratum is firm, olive gray, mottled loamy sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Ridgebury, Hollis, and Montauk soils that make up about 15 percent of this map unit.

The permeability of this soil is moderately rapid in the subsoil and slow in the substratum. Available water capacity is moderate, and reaction ranges from very strongly acid to medium acid. The rooting zone extends to the substratum, but root growth is restricted by a seasonal perched water table in the lower part of the subsoil. This soil is wet throughout the early part of spring, often in late spring, and sometimes in the fall.

Most areas of this soil are in woodland. A few areas are in residential development.

The stones on the surface make the soil poorly suited to cultivated crops. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees and woodland wildlife habitat, but slope and the stones on the surface limit recreational development.

The slow permeability in the substratum, the seasonal perched water table, and a susceptibility to frost action limit use of the soil for residential development and as a site for waste disposal facilities.

This unit is in capability subclass Vis.

**SrA—Sudbury fine sandy loam, 0 to 3 percent slopes.** This deep, nearly level, moderately well drained soil is on outwash plains. The areas are irregular in

shape and range from 5 to 25 acres. Slopes are 100 to 500 feet long.

Typically, the surface layer is very friable, very dark brown fine sandy loam about 4 inches thick. The subsoil is 22 inches thick and is very friable throughout. The upper 4 inches is dark yellowish brown fine sandy loam, the next 12 inches is yellowish brown sandy loam, and the lower 6 inches is yellowish brown, mottled loamy sand. The substratum is mottled, loose, yellowish brown stratified sand and gravel to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Merrimac and Walpole soils that make up about 20 percent of this map unit.

The permeability of this soil is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate, and reaction ranges from extremely acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table which is in the lower part of the subsoil during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Many areas are still farmed, and some are in urban and residential development.

This soil is well suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas, and the erosion hazard is slight. Wetness is the major limitation. The main management needs include installing field drains where needed, improving tilth, and increasing organic matter content. Where this soil is farmed, the use of cover crops and grasses and legumes in the cropping system and mixing crop residue and manure into the surface layer help improve tilth and increase organic matter content. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees and for openland and woodland wildlife habitat. It has few limitations for most recreational developments, but the seasonal high water table is a limitation for playgrounds.

The seasonal high water table, seepage, and a susceptibility to frost action limit the soil for most types of residential development and as a site for sanitary waste disposal facilities.

This unit is in capability subclass Iiw.

**SrB—Sudbury fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, moderately well drained soil is on outwash plains. The areas are irregular in shape and range from 5 to 25 acres. Slopes are 100 to 400 feet long.

Typically, the surface layer is very friable, very dark brown fine sandy loam about 4 inches thick. The subsoil is 22 inches thick and is very friable throughout. The upper 4 inches is dark yellowish brown fine sandy loam, the next 12 inches is yellowish brown sandy loam, and

the lower 6 inches is yellowish brown, mottled loamy sand. The substratum is loose, mottled, yellowish brown stratified sand and gravel to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Merrimac and Walpole soils that make up about 20 percent of this map unit.

The permeability of this soil is moderately rapid in the subsoil and rapid in the substratum. Available water capacity is moderate, and reaction ranges from extremely acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table which is in the lower part of the subsoil during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Many areas still are farmed, and some are in urban and residential development.

This soil is well suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderate, and wetness is a major limitation. The main management needs include installing field drains where needed, controlling erosion, improving tilth, and increasing organic matter content. Where this soil is farmed, minimum tillage and the use of cover crops and grasses and legumes in the cropping system help reduce runoff and control erosion. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees, woodland wildlife habitat, and openland wildlife habitat. It has few limitations for most types of recreation, but slope and the seasonal high water table limit its use for playgrounds.

The seasonal high water table, seepage, and a susceptibility to frost action limit the soil for residential development and as a site for waste disposal facilities.

This unit is in capability subclass IIw.

**SsB—Suffield silt loam, 3 to 8 percent slopes.** This deep, gently sloping, well drained soil is in irregularly shaped areas that range from 5 to 15 acres. Slopes are undulating and are 50 to 100 feet long.

Typically, the surface layer is friable, dark brown silt loam about 7 inches thick. The subsoil is light olive brown silt loam 28 inches thick. It is friable in the upper part, firm in the middle part, and very firm in the lower part. The substratum extends to a depth of 60 inches or more. It is very firm and sticky, light olive brown silty clay and has very thin layers of silt, clay, and very fine sand.

Included with this soil in mapping are small areas of Buxton and Scantic soils. Also included are a few areas of soils where the surface layer is loam. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate in the subsoil and slow in the substratum. Available water capacity is

high. Reaction is strongly acid to slightly acid in the subsoil and medium acid to neutral in the substratum. The rooting zone extends into the substratum.

Most areas of this soil are farmed. Some areas are in woodland, and some are in residential development.

This soil is well suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderate. Where this soil is farmed, stripcropping, minimum tillage, and the use of cover crops and grasses and legumes in the cropping system help reduce runoff and control erosion. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees, openland wildlife habitat, and woodland wildlife habitat. The slow permeability in the substratum is a limitation for some recreational uses.

The slow permeability and clayey texture of the substratum and a susceptibility to frost action limit the soil for residential development and as a site for waste disposal facilities.

This unit is in capability subclass IIc.

**SsC—Suffield silt loam, 8 to 15 percent slopes.** This deep, moderately sloping, well drained soil is in irregularly shaped areas that range from 5 to 15 acres. Slopes are 50 to 100 feet long.

Typically, the surface layer is friable, dark brown silt loam about 7 inches thick. The subsoil is light olive brown silt loam 28 inches thick. It is friable in the upper part, firm in the middle part, and very firm in the lower part. The substratum extends to a depth of 60 inches or more. It is very firm, light olive brown silty clay and has very thin layers of silt, clay, and very fine sand.

Included with this soil in mapping are small areas of Buxton soils. Also included are areas of soils with slopes of 15 to 25 percent. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate in the subsoil and slow in the substratum. Available water capacity is high. Reaction is strongly acid to slightly acid in the subsoil and medium acid to neutral in the substratum. The rooting zone extends into the substratum.

Most areas of this soil are farmed. Some areas are in woodland, and some are in residential development.

This soil is suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas. The erosion hazard is moderately severe. Where this soil is farmed, stripcropping, minimum tillage, and the use of cover crops and grasses and legumes in the cropping system help reduce runoff and control erosion. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.



The soil is suitable for trees, openland wildlife habitat, and woodland wildlife habitat. Slope and the slow permeability in the substratum limit some recreational uses.

The clayey texture and slow permeability of the substratum and a susceptibility to frost action limit the soil for residential development and as a site for waste disposal facilities.

This unit is in capability subclass IIIe.

**StA—Sutton fine sandy loam, 0 to 3 percent slopes.** This deep, nearly level, moderately well drained soil is on the tops of hills and in broad flats. The areas range from 5 to 15 acres.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is 17 inches thick. It is friable, yellowish brown fine sandy loam in the upper 13 inches and friable, light olive brown, mottled gravelly fine sandy loam in the lower 4 inches. The substratum is mottled, friable, light olive brown and light olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Leicester and Whitman soils and soils that are loamy sand throughout. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and moderate to rapid in the substratum. Available water capacity is moderate. Reaction is very strongly acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table that is within 42 inches of the surface during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some of the areas still are farmed, and many are in urban and residential development.

This soil is well suited to cultivated crops, hay, and pasture. The seasonal high water table is the main limitation for these uses, and drainage is needed. Mixing crop residue and manure into the surface layer helps improve tilth and increase the organic matter content of the soil. The use of proper stocking rates, deferred grazing, pasture rotation, and restricted grazing when the soil is saturated help to maintain desirable pasture plant species.

The soil is suitable for trees, openland wildlife habitat, and woodland wildlife habitat. It is generally suitable for recreational development.

The seasonal high water table and a susceptibility to frost action limit the soil for residential development. The high water table, along with the moderate to rapid permeability in the substratum, also limits the soil as a site for waste disposal facilities.

This unit is in capability subclass IIw.

**StB—Sutton fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, moderately well drained soil is on or near the tops of hills and ridges and

in irregularly shaped areas at lower elevations. The areas range from 5 to 25 acres. Slopes are mainly smooth and slightly concave and are 100 to 400 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is 17 inches thick. It is friable, yellowish brown fine sandy loam in the upper 13 inches and friable light olive brown mottled gravelly fine sandy loam in the lower 4 inches. The substratum is mottled, friable, light olive brown and light olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Leicester and Whitman soil, and soils that are loamy sand throughout. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and moderate to rapid in the substratum. Available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table that is within 42 inches of the surface during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some of the areas still are farmed, and many are in residential development.

This soil is well suited to cultivated crops, hay, and pasture. Erosion is a moderate hazard. The seasonal high water table is the main limitation, and drainage is needed. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees, openland wildlife habitat, and woodland wildlife habitat. It has few limitations for most recreational developments, but slope is a limitation for playgrounds.

The seasonal high water table and a susceptibility to frost action limit residential development. Use of the soil as a site for most types of waste disposal facilities is limited by the moderate to rapid permeability in the substratum and the seasonal high water table.

This unit is in capability subclass IIw.

**StC—Sutton fine sandy loam, 8 to 15 percent slopes.** This deep, moderately sloping, moderately well drained soil is on the sides of hills and ridges and in irregularly shaped areas at lower elevations. The areas range from 5 to 25 acres. Slopes are typically smooth and slightly concave and are 100 to 400 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 8 inches thick. The subsoil is 15 inches thick. It is friable, yellowish brown fine sandy loam in the upper 11 inches and friable, light olive brown, mottled gravelly fine sandy loam in the lower 4

inches. The substratum is mottled, friable, light olive brown and light olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Leicester soils, soils with slopes of 15 to 25 percent, and soils that are loamy sand throughout. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and moderate to rapid in the substratum. Available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum but root growth is restricted by a seasonal high water table that is within 42 inches of the surface during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some of the areas still are farmed, and many are in residential development.

This soil is suited to cultivated crops, hay, and pasture. Erosion is a moderately severe hazard. The seasonal high water table is the main limitation, and drainage is needed. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content of the soil. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees, openland wildlife habitat, and woodland wildlife habitat, but slope is a limitation for most recreational uses other than trails.

This soil is limited for residential development by the seasonal high water table, slope, and a susceptibility to frost action. It is limited as a site for most types of waste disposal facilities by the moderate to rapid permeability of the substratum and the seasonal high water table.

This unit is in capability subclass 11e.

**SuB--Sutton very stony fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, moderately well drained soil is in irregularly shaped areas on hills and on broad flats at lower elevations. The areas range from 5 to 50 acres and are covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart. Slopes are typically smooth, are slightly concave, and are 100 to 500 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is 17 inches thick. It is friable, yellowish brown fine sandy loam in the upper 13 inches and friable, light olive brown, mottled gravelly fine sandy loam in the lower 4 inches. The substratum is mottled, friable, light olive brown and light olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Leicester and Whitman soils. Also included are a few small areas of soils with slopes of 0 to 3 percent, areas where stones on the surface are 10 to 30 feet apart, and areas of soils that are loamy sand in the substratum.

Included soils make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and moderate to rapid in the substratum. Available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table that is within 42 inches of the surface during winter and spring.

Many areas of this soil are in woodland. Some areas are in urban and residential development, and a few are used for pasture.

The stones on the surface make the soil poorly suited to cultivated crops. The use of proper stocking rates, deferred grazing, and pasture rotation help maintain desirable pasture plant species.

The soil is suitable for trees and woodland wildlife habitat. The stones on the surface limit most recreational uses other than picnic areas.

This soil is limited for residential development and as a site for waste disposal facilities by the moderate to rapid permeability in the substratum, the seasonal high water table, the stones on the surface, and a susceptibility to frost action.

This unit is in capability subclass 11s.

**SuC--Sutton very stony fine sandy loam, 8 to 15 percent slopes.** This deep, moderately sloping, moderately well drained soil is in irregularly shaped areas on the sides of hills and ridges and on broad flats at lower elevations. The areas range from 5 to 50 acres and are covered by stones 1 to 3 feet in diameter that are 30 to 100 feet apart. Slopes are mainly smooth, slightly concave, and 100 to 500 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is 17 inches thick. It is friable, yellowish brown fine sandy loam in the upper 13 inches and friable, light olive, mottled gravelly fine sandy loam in the lower 4 inches. The substratum is mottled, friable, light olive brown and light olive gray gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Leicester soils. Also included are a few small areas of soils that are loamy sand throughout, areas where the stones on the surface are 10 to 30 feet apart, and a few areas of soils with slopes of 15 to 25 percent. Included soils make up about 15 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and moderate to rapid in the substratum. Available water capacity is moderate. Reaction ranges from very strongly acid to medium acid. The rooting zone extends into the substratum, but root growth is restricted by a seasonal high water table that is within 42 inches of the surface during winter and spring.

Most areas of this soil are in woodland. Some areas are in residential development, and a few are used for pasture.

The stones on the surface make this soil poorly suited to cultivated crops. The use of proper stocking rates, deferred grazing, and pasture rotation help to maintain desirable pasture plant species.

The soil is suitable for trees and woodland wildlife habitat, but slope and the stones on the surface limit recreational development.

The stones on the surface, slope, the seasonal high water table, and a susceptibility to frost action limit the soil for residential development and as a site for waste disposal facilities.

This unit is in capability subclass Vis.

**SwA—Swanton fine sandy loam, 0 to 3 percent slopes.** This deep, nearly level, poorly drained soil is in depressions. The areas range from 5 to 20 acres. Slopes are smooth and are 100 to 300 feet long.

Typically, the surface layer is very dark brown and very dark grayish brown fine sandy loam about 8 inches thick. The subsoil is 20 inches thick. It is olive, mottled, friable fine sandy loam in the upper 11 inches and olive gray, mottled, firm fine sandy loam in the lower 9 inches. The substratum is mottled, olive, firm silty clay loam and silty clay to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Melrose and Whately Variant soils that make up about 15 percent of this map unit.

The permeability of this soil is moderately rapid in the subsoil and slow in the substratum. Available water capacity is high. Reaction ranges from strongly acid to medium acid in the subsoil and from medium acid to neutral in the substratum. The rooting zone extends into the subsoil, but root growth is restricted by a seasonal high water table which is at or near the surface in winter and spring.

Many areas of this soil are in woodland, but the soil is poorly suited to tree production. Some areas are farmed, and a few are in residential and urban development.

This soil is suitable for cultivated crops, hay, and pasture. The seasonal high water table keeps the soil saturated through late spring. The erosion hazard is slight. The main management needs include drainage, proper timing of farming operations, and the use of water-tolerant plant species. The use of proper stocking rates, deferred grazing, pasture rotation, and restricted grazing when the soil is saturated help maintain desirable pasture plant species.

The soil is suitable for most types of wildlife habitat, but the seasonal high water table is a limitation for recreational and residential development and limits the soil as a site for waste disposal facilities. A susceptibility to frost action is an additional limitation for residential development.

This unit is in capability subclass IIIw.

**SwB—Swanton fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, poorly drained soil is in depressions. The areas range from 5 to 15 acres. Slopes are smooth and undulating and are 100 to 200 feet long.

Typically, the surface layer is very dark brown and dark grayish brown fine sandy loam about 8 inches thick. The subsoil is about 20 inches thick. It is olive, mottled, friable fine sandy loam in the upper 11 inches and olive gray, mottled, firm fine sandy loam in the lower 9 inches. The substratum is mottled, olive, firm silty clay loam and silty clay to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Melrose and Whately Variant soils that make up about 15 percent of this map unit.

The permeability of this soil is moderately rapid in the subsoil and slow in the substratum. Available water capacity is high. Reaction ranges from strongly acid to medium acid in the subsoil and from medium acid to neutral in the substratum. The rooting zone extends into the subsoil, but root growth is restricted by a seasonal high water table which is at or near the surface in winter and spring.

Many areas of this soil are in woodland, but the soil is poorly suited to tree production. Some areas are farmed, and a few areas are in residential and urban development.

This soil is suitable for cultivated crops, hay, and pasture. The seasonal high water table keeps the soil saturated through late spring. The erosion hazard is moderate. The main management needs include drainage, proper timing of farming operations, use of water-tolerant plant species, and erosion control practices. The use of proper stocking rates, deferred grazing, pasture rotation, and restricted grazing when the soil is saturated help maintain desirable pasture plant species.

The soil is suitable for openland and woodland wildlife habitat, but the seasonal high water table is a limitation for recreational and residential development and limits the soil as a site for waste disposal facilities. A susceptibility to frost action is an additional limitation for residential development.

This unit is in capability subclass IIw.

**UAC—Udipsamments, rolling.** These deep, gently sloping to very steep, excessively drained to moderately well drained soils are on sand dunes adjacent to coast beaches and tidal marshes. The areas are irregular in shape and range from 10 to 850 acres.

Typically, the soil is loose, gray, light gray, and grayish brown sand to a depth of 60 inches or more.

Included with these soils in mapping are small areas of Ipswich and Westbrook soils and small areas of Scaboro soils. Also included are a few small areas in depressions that have a seasonal high water table at a depth of less than 4 feet, areas of Beaches, and a few



to strongly acid. A seasonal high water table is at a depth of 1.5 to 3 feet during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some areas still are farmed, and many are in urban and residential development.

This soil is well suited to cultivated crops, hay, and pasture. The seasonal high water table is the main limitation, and providing drainage is a management concern. Mixing crop residue and animal manure into the surface layer improves tilth and increases the organic matter content of the soil. The use of proper stocking rates, deferred grazing, pasture rotation, and restricted grazing when the soil is saturated help to maintain desirable pasture plant species.

The soil is suitable for trees and openland wildlife habitat, but the slow permeability in the substratum is a limitation for some types of recreational development.

The seasonal high water table limits use of the soil for residential development and as a site for waste disposal facilities. A susceptibility to frost action is an additional limitation for residential development, and the slow permeability in the substratum for waste disposal facilities.

This unit is in capability subclass IIw.

**Wrb—Woodbridge fine sandy loam, 3 to 8 percent slopes.** This deep, gently sloping, moderately well drained soil is in rectangular or oval areas on or near the tops of drumoidal hills and is in irregularly shaped areas at lower elevations. The areas range from 5 to 25 acres. Slopes are 100 to 400 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is friable fine sandy loam 17 inches thick. It is yellowish brown in the upper part, mottled olive brown in the middle part, and mottled olive in the lower part. The substratum is mottled, very firm, light olive brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Ridgebury and Whitman soils. Also included are areas of soils with a subsoil of loamy sand. Included soils make up about 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid in the subsoil and slow in the substratum. Available water capacity is moderate. The rooting zone of plants extends to a depth of about 26 inches, where root growth is restricted by the very firm substratum. Reaction ranges from medium acid to strongly acid. A seasonal high water table is at a depth of 1.5 to 3 feet during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some areas still are farmed, and some are in urban and residential development.

This soil is well suited to cultivated crops, hay, and pasture. The seasonal high water table is the main limitation, and providing drainage is a management concern.

Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content of the soil. Erosion is a moderate hazard in cultivated areas. The use of proper stocking rates, deferred grazing, and pasture rotation help to maintain desirable pasture plant species.

The soil is suitable for trees and openland wildlife habitat, but the slow permeability in the substratum is a limitation for some types of recreational development.

The seasonal high water table limits use of the soil for residential development and as a site for waste disposal facilities. A susceptibility to frost action is an additional limitation for residential development, and the slow permeability in the substratum for waste disposal facilities.

This unit is in capability subclass IIw.

**Wrc—Woodbridge fine sandy loam, 8 to 15 percent slopes.** This deep, sloping, moderately well drained soil is in rectangular or oval areas on or near the tops of drumoidal hills and is in irregularly shaped areas at lower elevations. The areas range from 5 to 25 acres. Slopes are 100 to 400 feet long.

Typically, the surface layer is friable, very dark grayish brown fine sandy loam about 8 inches thick. The subsoil is friable fine sandy loam 17 inches thick. It is yellowish brown in the upper part, mottled olive brown in the middle part, and mottled olive in the lower part. The substratum is mottled, very firm, light olive brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Ridgebury and Paxton soils. Also included are areas of soils with slopes of 15 to 25 percent and areas of soil with a subsoil of loamy sand.

The permeability of this soil is moderate or moderately rapid in the subsoil and slow in the substratum. Available water capacity is moderate. The rooting zone extends to a depth of about 25 inches, where root growth is restricted by the very firm substratum. Reaction ranges from medium acid to strongly acid. A seasonal high water table is at a depth of 1.5 to 3 feet during winter and spring.

Most areas of this soil have been farmed. Some previously cleared areas have reverted to or been planted to trees. Some areas still are farmed, and some are in residential development.

This soil is suited to cultivated crops, hay, and pasture. The erosion hazard is moderately severe. The seasonal high water table is a limitation, and providing drainage is a major concern. Mixing crop residue and manure into the surface layer improves tilth and increases the organic matter content of the soil. Minimum tillage, contour cultivation, and incorporating grasses and legumes in the cropping system help reduce runoff and control erosion. The use of proper stocking rates, deferred grazing, and pasture rotation help to maintain desirable pasture plant species.



U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION

SYMBOL	DESCRIPTION	NAME
AgA	Agawam fine sandy loam	Saco Variant silt loam
AgB	Agawam fine sandy loam	Scenic silt loam, 0 to 3 percent slopes
AgC	Agawam fine sandy loam	Scenic silt loam, 3 to 8 percent slopes
AmA	Amosdown fine sandy loam	Scarboro muck fine sandy loam
AmB	Amosdown fine sandy loam	Schuette fine sandy loam, 3 to 8 percent slopes
Ba	Beeches	Schuette fine sandy loam, 8 to 15 percent slopes
BeA	Belgrade very fine sandy	Schuette very stony fine sandy loam, 3 to 8 percent slopes
BeB	Belgrade very fine sandy	Schuette very stony fine sandy loam, 8 to 15 percent slopes
BeC	Belgrade very fine sandy	Sudbury fine sandy loam, 0 to 3 percent slopes
Br	Birdsall silt loam	Sudbury fine sandy loam, 3 to 8 percent slopes
BuA	Buxton silt loam, 0 to 3 p	Suffield silt loam, 3 to 8 percent slopes
BuB	Buxton silt loam, 3 to 8 p	Suffield silt loam, 8 to 15 percent slopes
BuC	Buxton silt loam, 8 to 15	Sutton fine sandy loam, 0 to 3 percent slopes
BuB	Buxton-Rock outcrop cor	Sutton fine sandy loam, 3 to 8 percent slopes
BuC	Buxton-Rock outcrop cor	Sutton fine sandy loam, 8 to 15 percent slopes
CaA	Canton fine sandy loam	Sutton very stony fine sandy loam, 3 to 8 percent slopes
CaB	Canton fine sandy loam	Sutton very stony fine sandy loam, 8 to 15 percent slopes
CaC	Canton fine sandy loam	Sutton very stony fine sandy loam, 15 to 25 percent slopes
CaD	Canton fine sandy loam	Swanton fine sandy loam, 3 to 8 percent slopes
CdB	Canton very stony fine si	Udipermments, rolling
CdC	Canton very stony fine si	Udipermments, smoothed
CdD	Canton very stony fine si	Unadilla very fine sandy loam, 0 to 3 percent slopes
CdE	Canton very stony fine si	Unadilla very fine sandy loam, 3 to 8 percent slopes
CdF	Canton extremely stony i	Unadilla very fine sandy loam, 8 to 15 percent slopes
CdG	Canton extremely stony i	Urban land
CdH	Canton extremely stony i	Walpole fine sandy loam, 0 to 3 percent slopes
CdI	Canton extremely stony i	Walpole fine sandy loam, 3 to 8 percent slopes
CdJ	Canton extremely stony i	Walpole Variant fine sandy loam
CdK	Canton extremely stony i	Wareham loamy sand, 0 to 3 percent slopes
CdL	Canton extremely stony i	Wareham loamy sand, 3 to 8 percent slopes
CdM	Canton extremely stony i	Whately Variant fine sandy loam
CdN	Canton extremely stony i	Whately Variant fine sandy loam
CdO	Canton extremely stony i	Whately Variant fine sandy loam
CdP	Canton extremely stony i	Whately Variant fine sandy loam
CdQ	Canton extremely stony i	Whately Variant fine sandy loam
CdR	Canton extremely stony i	Whately Variant fine sandy loam
CdS	Canton extremely stony i	Whately Variant fine sandy loam
CdT	Canton extremely stony i	Whately Variant fine sandy loam
CdU	Canton extremely stony i	Whately Variant fine sandy loam
CdV	Canton extremely stony i	Whately Variant fine sandy loam
CdW	Canton extremely stony i	Whately Variant fine sandy loam
CdX	Canton extremely stony i	Whately Variant fine sandy loam
CdY	Canton extremely stony i	Whately Variant fine sandy loam
CdZ	Canton extremely stony i	Whately Variant fine sandy loam
Da	Deerfield loamy fine sand	Windsor loamy sand, 0 to 3 percent slopes
Du	Dumpe	Windsor loamy sand, 3 to 8 percent slopes
E1A	Elmwood fine sandy loam	Windsor loamy sand, 8 to 15 percent slopes
E1B	Elmwood fine sandy loam	Windsor loamy sand, 15 to 25 percent slopes
Ha	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 3 to 15 percent slopes
HA	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 15 to 25 percent slopes
HB	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 25 to 35 percent slopes
HC	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 35 to 45 percent slopes
HD	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 45 to 55 percent slopes
HWE	Hadley very fine sandy lo	Windsor-Rock outcrop complex, 55 to 65 percent slopes

LAKE CHARLTONER LAND

AMESBURY, MASS

SOIL DATA

MAPPING UNIT	SLOPE	SOIL NAME	AGRONOMIC GROUP	WOODLAND GROUP
CMB	3-8%	CHARLTON FINE SANDY LOAM	IIe 3	403
CMC	8-15%	" " " "	IIIe 3	403
CMD	15-25%	" " " "	IVe 3	4r3
C0B	3-8%	CHARLTON VERY STONY fsl.	VI s 3	403
C0D	15-25%	" " " "	VI s 3	4r3
R1B	3-8%	RIDGEBURY EXTREMELY STONY fsl.	VII s 23	4x3
ScA	0-3%	SCANTIC SILT LOAM	IVw 4	5w1
SrB	3-8%	SUDBURY fsl.	IIe 52	401
SrB	3-8%	SUTTON fsl.	I w 3	403
S0B	3-8%	SUTTON VERY STONY fsl.	VIS 22	403
S0C	8-15%	SUTTON " " "	VI s 22	403
Wrb	3-8%	WOODBIDGE fsl.	IIw 2	304

Capability Unit VIs22

Description

These gently sloping to moderately steep soils are silty or loamy. They crumble easily to depths of two or three feet. Water moves readily through this zone. Below these depths these soils are silty, loamy or sandy. Water moves easily through some of these soils and is restricted by a thick, firm layer in other soils. Stones on the surface limit cultivation. These soils have a water table which is within two feet of the surface during winter and spring. These soils hold enough water to enable plants to tolerate short periods of drought.

Limitation

Stones on the surface are the major limitation for the use and management of these soils. Wetness is a secondary limitation.

Crop Use

These soils are poorly suited for cultivated crops unless stones are removed. The stones on the surface interfere with the use of machinery.

Forage Use

The soils are suited to native pasture in their existing condition. These soils are poorly suited to use for hay and improved pasture unless stones are removed. Removal of stones will permit the planting of forage species such as timothy, reed canarygrass, ladino clover and alsike clover. In a few places on the less sloping soils the surface stones are low enough to allow the use of equipment, but in most places the surface stones interfere with the use of machinery. The main management concern is the prevention of overgrazing that reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

Yields

The estimated yields that can be expected on these soils with good management are:

Pasturage, 3.5 to 4.0 animal unit months per acre.

The estimated yields that can be expected if stones are removed are:

Alfalfa-grass, 3.0 to 4.0 tons per acre.

Clover-grass, 3.0 to 3.5 tons per acre.

The soils in this unit are:

U. S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Agronomic Interpretations  
June 1980

U. S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Agronomic Interpretations  
June 1980

### Capability Unit IIw2

#### Description

These nearly level and gently sloping soils are silty or loamy and crumble easily to a depth of two or three feet. Water moves easily through this zone. Below these depths, the downward movement of water is restricted by a thick, firm, silty, loamy or sandy layer. A high water table is within 2 feet of the surface during winter and spring. These soils hold enough water to enable plants to tolerate short periods of drought. These soils have few or no stones on the surface.

#### Limitation

Wetness caused by a seasonal high water table is the main limitation for the use and management of these soils. Erosion is a hazard on the gently sloping soils in this unit.

#### Crop Use

These soils are suited to most crops grown in the area. Planting may be delayed in the spring or harvesting delayed in the fall by the high water table. Drainage is needed for maximum crop yield and the most efficient use of machinery. The firm soil layer increases the difficulty of installing effective drainage systems. On the gently sloping soils, farming on the contour or across the slope, crop rotations, diversions, conservation tillage, and cover crops are practices that help reduce erosion. Use of cover crops and incorporating grasses and legumes in the cropping system help to improve tilth. Mixing crop residues and manure into the surface layer also improves tilth.

#### Forage Use

These soils are suited to grasses and legumes for hay and pasture. Bluegrass grows well, but other forage grasses give higher yields. Most hay and forage species are suited to the undrained soils. Alfalfa and red clover require soil drainage for good yields. Reseeding in strips or across the slope reduces the risk of erosion. The main management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

#### Yields

The estimated yields that can be expected on these soils with good management and where drainage and other conservation practices have been applied are:

Silage corn, 18 to 24 tons per acre.

Potatoes, 270 to 330 hundredweight per acre.

Alfalfa-grass hay, 3.5 to 4.0 tons per acre.

Clover-grass hay, 3.5 to 4.0 tons per acre.

Capability Unit VI<sub>s3</sub>

Description

These gently sloping to moderately steep soils are loamy or silty. They crumble easily to a depth of two or three feet. Below these depths the soils are silty, loamy or sandy. Water moves easily throughout these soils. Stones on the surface limit cultivation. These soils hold enough water to enable plants to tolerate short periods of drought. The water table is below five feet throughout the year.

Limitation

Stones on the surface are the major limitation for the use and management of these soils.

Crop Use

The soils are poorly suited for cultivated crops unless stones are removed. The stones on the surface interfere with the use of machinery.

Forage Use

These soils are suited to use for native pasture in their existing condition. Removal of the stones will permit the planting of forage species so they can be used for hay and pasture. These soils are poorly suited for hay and improved pasture unless the stones are removed. In a few places, the surface stones are low enough to allow the use of equipment for clipping, liming, or fertilizing, but in most places the surface stones interfere with the use of machinery. The main management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

Yields

The estimated yields that can be expected on these soils with good management are:

Pasturage, 2.5 to 4.0 animal unit months per acre.

The estimated yields that can be expected if stones are removed are:

Alfalfa-grass, 4.0 to 5.0 tons per acre.

Clover-grass, 3.5 to 4.0 tons per acre.

The soils in this unit are:

Capability Unit 11w3

Description

These nearly level and gently sloping soils are sandy or loamy and crumble easily to a depth of two or three feet. Below these depths, these soils are loamy or sandy and crumble easily or are loose. Water moves easily through these soils. A high water table is within 2 feet of the surface during winter and spring. These soils hold enough water to enable plants to tolerate short periods of drought. These soils have few or no stones on the surface.

Limitation

Wetness caused by a seasonal high water table is the main limitation for the use and management of these soil. Erosion is a hazard on the gently sloping soils.

Crop Use

These soils are suited to most crops grown in the area. Planting or harvesting may be delayed by the high water table. Drainage is needed for maximum crop yield and the most efficient use of machinery. On the gently sloping soils, farming on the contour or across the slope, crop rotations, diversions, conservation tillage, and cover crops are practices that help reduce erosion. Use of cover crops and incorporating grasses and legumes in the cropping system helps to improve tilth. Mixing crop residues and manure into the surface layer also improves tilth.

Forage Use

These soils are suited to grasses and legumes for hay and pasture. Bluegrass grows well, but other forage grasses give higher yields. Most forage species are suited to the undrained soils. Alfalfa and red clover require soil drainage for good yields. Reseeding in strips or across the slope reduces the risk of erosion on the gently sloping soils. The main management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

Yields

The estimated yields that can be expected on these soils with good management and where drainage and other conservation practices have been applied are:

Silage corn, 18 to 24 tons per acre.

Potatoes, 240 to 270 hundredweight per acre.

Alfalfa-grass hay, 3.5 to 4.0 tons per acre.

Clover-grass hay, 3.0 to 4.0 tons per acre.

The soils in this unit are:

Commonwealth of Massachusetts  
 ROBERT Q. CRANE  
 TREASURER AND RECEIVER GENERAL

No 1934953

VENDOR REFERENCE	AGENCY CODE	STATE AGENCY	AMOUNT
011386	362 365004	SEC OF ENVIRONMENTAL AFFAIRS	599,200.00

DIRECT ALL CORRESPONDENCE TO STATE AGENCY ABOVE

USE THIS NUMBER 35 ON ALL CORRESPONDENCE

CHECK AMOUNT 599,200.00

Commonwealth of Massachusetts  
 State Treasurer

No 1934953

To the ARLINGTON TRUST COMPANY, LAWRENCE, MASS.

PAY TO THE ORDER OF

TOWN OF AMESBURY S H  
 CONSERVATION SERVICES  
 100 CAMBRIDGE RD 2006  
 BOSTON  
 MA 02202

MO	DATE	YR
01	17	86

REFERENCE NUMBER

046001067

CHECK AMOUNT	DOLLARS	CENTS
599,200.00		

035

*Robert Q. Crane*

Treasurer and Receiver General

⑈01934953⑈ ⑆011301170⑆ ⑆00 0381 6⑈

Capability Unit IVe3

Description

These moderately steep soils are loamy or silty. They crumble easily to a depth of two or three feet. Below these depths the soils are silty, loamy or sandy, or there is bedrock. Water moves easily through these soils. These soils hold enough moisture to enable plants to tolerate short periods of drought. The water table is below five feet throughout the year. These soils have few or no stones on the surface.

Limitation

The risk of erosion is the major limitation for the use and management of these soils.

Crop Use

These soils are suited to crops commonly grown in the area. The steep slopes make it difficult to safely use machinery. These soils will erode when cultivated, unless conservation practices are applied. These practices include cover crops, farming across the slope or on the contour, diversions, terraces, stripcropping, and incorporating grasses and legumes in the crop rotation. Mixing manure and crop residues into the plow layer improves tilth and increases water-holding capacity.

Forage Use

These soils are well suited to grasses and legumes for hay and pasture. Bluegrass grows well, but other forage grasses give higher yields. Alfalfa and red clover grow well and give the best yields. Reseeding in strips across the slope or on the contour reduces the risk of erosion. The main management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

Yields

The estimated yields that can be expected on these soils with good management and where conservation practices have been applied are:

Silage corn, 15 to 20 tons per acre.

Alfalfa-grass hay, 3.5 to 4.5 tons per acre.

Clover-grass hay, 3.0 to 3.5 tons per acre.

The soils in this unit are:



Capability Unit IIIe3

Description

These moderately sloping soils are loamy or silty and crumble easily to a depth of two or three feet. Below these depths, these soils are silty, loamy or sandy, or there is bedrock. Water moves easily through these soils. They hold enough water to enable plants to tolerate short periods of drought. The water table is below five feet throughout the year. These soils have few or no stones on the surface.

Limitation

Erosion is the main hazard for the use and management of these soils.

Crop Use

These soils are suited to most crops grown in the area. Farming on the contour or across the slope, terraces, diversions, crop rotations, stripcropping, cover crops and conservation tillage are practices that help reduce erosion. Drainage is needed in wet areas to facilitate the use of equipment. Use of cover crops and incorporating grasses and legumes in the cropping system help to improve tilth. Mixing crop residues and manure into the surface layer also improves tilth and increases water-holding capacity.

Forage Use

These soils are well suited to grasses and legumes for hay and pasture. Bluegrass grows well on these soils, but other forage grasses give better yields. Alfalfa and red clover give the highest yields. The main management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

Yields

The estimated yields that can be expected on these soils with good management and where conservation practices have been applied are:

- Silage corn, 18 to 24 tons per acre.
- Potatoes, 270 to 330 hundredweight per acre.
- Alfalfa-grass hay, 4.0 to 5.0 tons per acre.
- Clover-grass hay, 3.5 to 4.0 tons per acre.

The soils in this unit are:

#4

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DIVISION OF CONSERVATION SERVICES

RECEIVED  
DEC 27 1985

SELF-HELP PROGRAM  
BILLING FORM  
FOR APPROVED PROJECTS

1. MUNICIPALITY Town of Amesbury SH PROJECT # 4 and 5
2. PROJECT NAME Lake Gardner Acquisition
3. PLEASE INDICATE ANY CHANGES WHICH MAY HAVE AFFECTED ANSWERS TO QUESTIONS IN YOUR SELF-HELP APPLICATION, PREVIOUSLY SUBMITTED TO THE DIVISION OF CONSERVATION SERVICES.  
We received an additional \$100,000 for the acquisition of SH Project #5.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. COST OF LAND ACQUISITION \$749,000.00
5. COST ALLOCATED TO PLANNING AND DESIGNING, IF ANY \$2175.00
6. TOTAL PROJECT COST (INCLUDE LAND, PLANNING, DESIGNING AND DEVELOPMENT) \$151,975.00
7. APPROPRIATIONS FOR TOTAL PROJECT \$149,800.00
8. DID TOWN APPLY FOR FEDERAL REIMBURSEMENT? n/a  
AMOUNT RECEIVED \_\_\_\_\_ AGENCY \_\_\_\_\_

DIVISION OF CONSERVATION SERVICES NOTATIONS:

DATE RECEIVED 12/23/85 DATE REVIEWED 12/26/85  
APPLICATION APPROVED 12/26/85 REVIEWED BY Jed  
APPLICATION DENIED \_\_\_\_\_  
FURTHER INFORMATION \_\_\_\_\_  
AMOUNT OF REIMBURSEMENT \$ 500,000

ACTION APPROVED:

DATE 12/26/85 for James S. Hoyte  
James S. Hoyte, Secretary

SIN#4



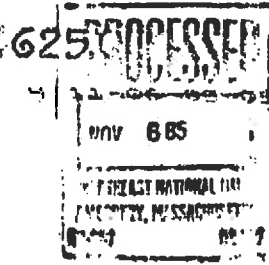
# TOWN OF AMESBURY

DEPT. Lk Gardner PAY  
Acquisition  
Art. #51,1985

TO THE  
ORDER  
OF

Andover River Trust

TO THE  
NORTHEAST NATIONAL BANK  
Amesbury, Mass.



No. - 34776

\$ 625,000.00

4711 333 450552276

TOWN OF AMESBURY

#034776# #011303822# #60-050-4#

#006250000#



# Amesbury

Town Hall, Amesbury, MA 01913

December 24, 1985

Mr. Joel Lerner  
Director  
Executive Office of Environmental  
Affairs  
Division of Conservation Services  
100 Cambridge Street  
Boston, Mass. 02202

Dear Mr. Lerner:

Please advised that the sum of \$625,000 was paid to the  
Andover River Trust as per Article 51 of the Annual Town Meeting.  
The said sum was paid on November 5, 1985 by the Town of Amesbury's  
Check # 34776.

Barbara Moore  
Barbara Moore, Treasurer

Kathleen Fallon  
December 24, 1985

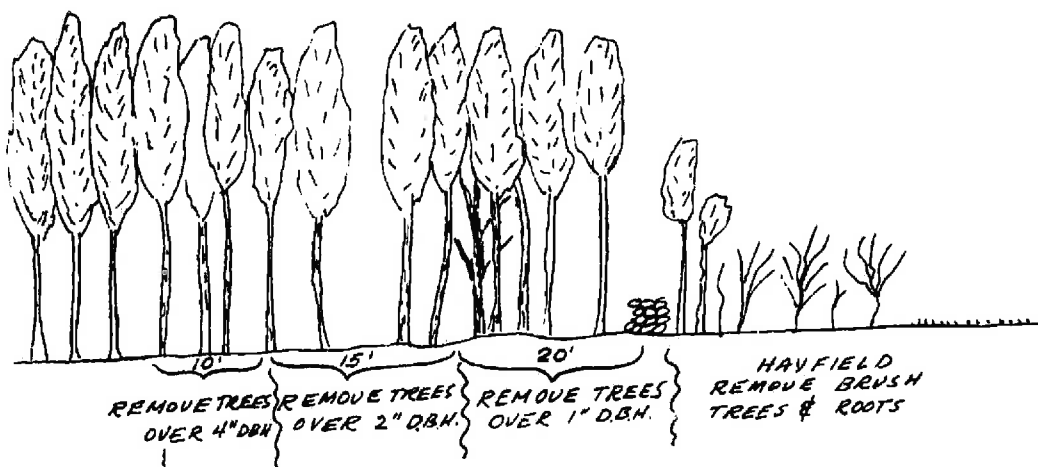
KATHLEEN G. FALLON, NOTARY PUBLIC  
MY COMMISSION EXPIRES  
AUGUST 19, 1990

SH # 4

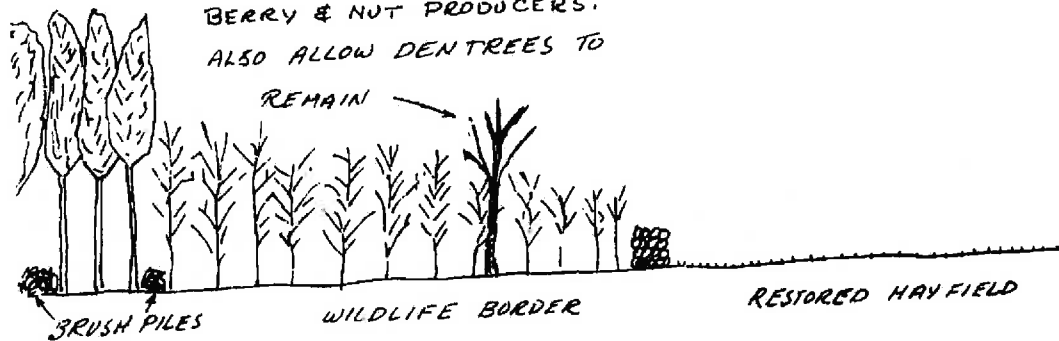
AMESBURY

2 OF 3

## CUT-BACK BORDER FOR WILDLIFE

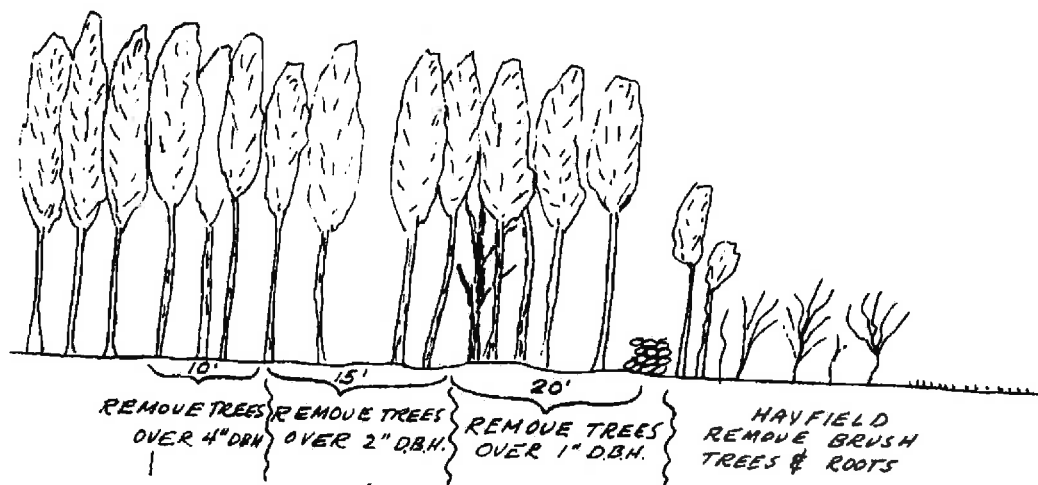


EXCLUDE FROM CUTTING, TREES THAT HAVE ORNAMENTAL VALUE OR TREES & SHRUBS WHICH HAVE WILDLIFE VALUE, SUCH AS BERRY & NUT PRODUCERS. ALSO ALLOW DENT TREES TO

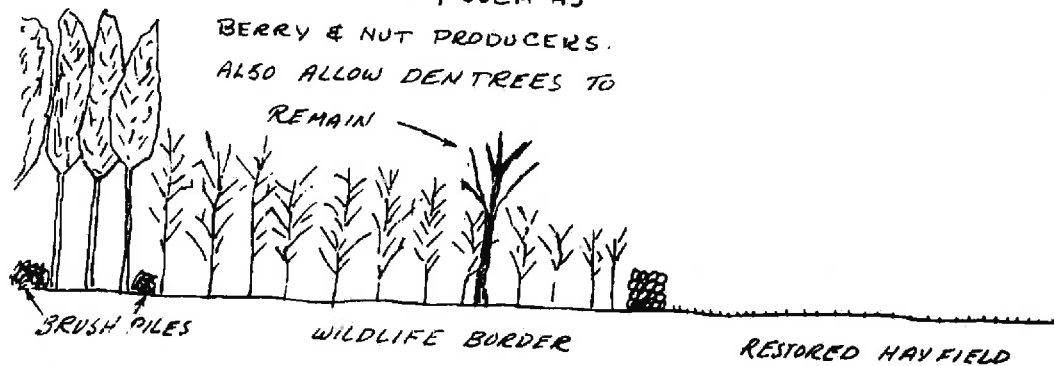


CUT-BACK BORDER SHOULD HAVE A MINIMUM LENGTH OF 200'

# CUT-BACK BORDER FOR WILDLIFE



EXCLUDE FROM CUTTING, TREES THAT HAVE ORNAMENTAL VALUE OR TREES & SHRUBS WHICH HAVE WILDLIFE VALUE, SUCH AS BERRY & NUT PRODUCERS. ALSO ALLOW DENT TREES TO



CUT-BACK BORDER SHOULD HAVE A MINIMUM LENGTH OF 200'

CHARLES W. HUSSEY  
Real Estate Appraiser and Consultant  
92 High Street  
Hampton, New Hampshire 03842  
603 926-7401

August 29, 1984

Mr. Joseph Fahey  
Director of Administration and Development  
Town Hall  
Amesbury, Massachusetts 01913

Dear Mr. Fahey

I have made an investigation and appraisal of the two unimproved parcels of land located respectively on the south side of Southampton Road and west side of Orchard Court, Amesbury, Massachusetts for the purpose of expressing an opinion of their separate market value, assuming them to be available for sale on the open market.

The term market value is defined as the most probable price at which the property would sell if exposed on the open market, allowing a reasonable time to find a purchaser who buys with knowledge of all uses to which it is suited and for which it is capable of being used.

The property appraised is the owner's interest in the land complete with all improvements to and on the land. Any value related to personal property and enterprise is specifically excluded. A personal inspection of the property was made and all factors affecting value were investigated and analyzed.

My report consists of:

This letter of transmittal which identifies the property and summarizes the results of the investigation.

A narrative section containing a description of the property, a presentation of the valuation procedure and a conclusion of value.



Mr. Joseph Fahey  
Page 2

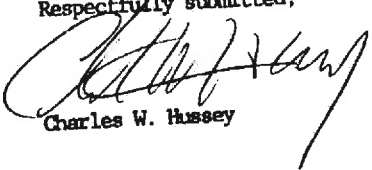
An exhibit section which contains:

- A - Comparative Sales Map
- B - Location Map
- C - Plot Plan
- D - Adjustment Chart
- E - Photographs
- F - Certificate
- G - Qualifications

In my opinion the market value of the property as of August 28, 1984  
is as follows:

Parcel A	\$476,000
Parcel B	\$124,000

Respectfully submitted,

  
Charles W. Hussey

CWH/ty

*Robert V. Noone*

*No photos*

REAL ESTATE

APPRAISER

40 GLENDALE AVE., PEABODY, MASS. 01960 598-1436

RECEIVED JUN 17 1985

June 13, 1985

Joseph Fahey, Director  
Office of Administration and Development  
Town of Amesbury  
Amesbury Town Hall  
Amesbury, Massachusetts 01913

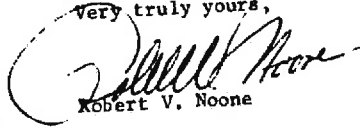
Dear Mr. Fahey:

Enclosed please find amended and additional pages to attend my March 23, 1985 appraisal of the land owned by the Ardon Corporation on Southampton Road at Gardner Lake, Amesbury, Massachusetts.

These changes and additions are being submitted in compliance with your request for the same as per the review undertaken by Mr. Joel A. Lerner, Director of the Division of Conservation Services of the Executive Office of Environmental Affairs of the Commonwealth of Massachusetts.

Thank you for bringing these matters to my attention and offering me the opportunity to make the necessary changes.

Very truly yours,

  
Robert V. Noone

RVN/ea  
Enc.

## TABLE OF CONTENTS

	<u>Page</u>
Certificate Of Valuation	2
Purpose Of Appraisal	3
Summary Of Salient Facts	4
Photographs	5
Plan Of Property	6
Description Of Property	7
Property Locus Map	9
Community Data	10
Neighborhood Influences	11
Real Estate Assessment Data	12
Zoning	13
Rental Income Data	13
Ten Year Sales History Analysis	14
Highest And Best Use	16
Valuation Analysis	17
The Appraisal Process	18
Land Sales Analysis	19
Subdivision Technique	21
Acreage Sales Analysis	25
Correlation And Final Value Estimate	27
Addenda	
Copy...Subdivision Plan	
Lot Sales Data	
Acreage Sales Data	
Sales Location Map	
Copy...Administrative Order No. 551	
Report Limitations	
Appraiser's Qualifications	

---

ROBERT V. NOONE, *Appraiser*

CITY / TOWN Amesbury, Massachusetts PARCEL NO. n/a  
 OWNER The Ardon Corporation

### APPRAISED VALUE OF LAND (MARKET)

ADJUSTMENT FACTORS	SALE NO. 12	SALE NO. 13	SALE NO. 14	
ADJ. PURCHASE PRICE From analysis sm.	10,173/ac.	9,264/ac.	6,802/ac.	
LAND AREA	-4,000	-3,500	-4,500	
LOCATION	equal	equal	+1,500	
LOT CHARACTERISTICS	+2,000	+1,500	+3,000	
LANDSCAPING	n/a	n/a	n/a	
Public Utilities	-2,000	equal	equal	
NET ADJUSTMENT	-4,000	-2,000	n/a	
INDICATED VALUE OF SUBJECT LAND	\$ 6,173/ac.	\$ 7,264/ac.	\$ 6,802/ac.	

### EXPLANATION OF ADJUSTMENTS:

Adjusted purchase price is the result of an adjustment of approximately 18 per cent per year to reflect market appreciation. Lot characteristic adjustments are to reflect frontage of the subject on a waterway and lake, and the adjustment for location considers the neighborhood amenities and neighboring land uses.

A correlation of adjustments suggests a Fair Market Value of the subject of approximately \$7,300 per acre.

### INDICATED VALUE OF LAND:

Show computations 85.27 acres at \$7,300 = \$622,400

Land Sales Data:

Sale Number 12

Sale Property Location: Fern Avenue and Market Street  
Amesbury, Massachusetts

Grantor: Patricia Verville Richardson

Grantee: Michael Ouellette Construction, Inc.

Date Of Sale: March 8, 1985

Title Reference: Book 7681, Page 159

Mortgages: Grantor - \$125,000

Price: \$235,000

Unit Price: \$10,173 per acre

Land Area: 23.2 acres Frontage: Fern = 83' Shape: Irregular  
Market St. = 109'

Topographical Features: Rolling and undulating land. Rear 9  
acres are low and wet and are to be  
dedicated for conservation use.  
Front land has been approved for 11  
lot subdivision.

Utilities Available: Water, sewer, electric, telephone

Conditions Of Sale: Arms length transaction

Sale Confirmed With: Grantee's attorney and grantor

Inspection Date Of Sale: March 16, 1985 Zoning: Residential

Highest And Best Use Estimate: Residential subdivision

ROBERT V. NOONE, *Appraiser*

Correlation And Final Value Estimate:

In arriving at an estimate of the Fair Market Value of the real property that is subject of this report, this appraiser has considered the use of the three approaches to value, namely the Cost, Income and Market Data or Comparative Approaches.

Where the subject is unimproved land having no rental income attributable to it and where land of the nature of the subject is not commonly rented or bought and sold on the basis of its ability to produce a net income stream, neither the Cost nor Income Approaches are considered to be applicable in the appraisal process.

In the remaining Market Approach, the appraiser viewed and analyzed the subject under a program of use and Highest and Best Use of Residential Subdivision and also as acreage or raw land that was adaptable to subdivision.

The value estimate by way of analysis of acreage sales was in the amount of \$622,400 and that indicated by way of the application of the subdivision or Development Technique was \$625,000.

When all factors are considered, it is the opinion of this appraiser that the Fair Market Value of the herein described parcel of land, as of the date first set forth herein, is \$625,000.

Final Value Estimate Then:

Six Hundred Twenty-Five Thousand Dollars

\$625,000

---

ROBERT V. NOONE, *Appraiser*

August 21, 1984

Mr. Joseph W. Fahey, Director  
Administration and Development  
Town Hall  
Amesbury, Massachusetts 01913

Sir:

I have made an investigation and appraisal of the land located at South Hampton Road and Orchard Court, Amesbury, Massachusetts for the purpose of expressing an opinion of the Fair Market Value of the property assuming it to be vacant and available for sale on the open market for whatever use the market may determine.

The property appraised is the fee simple interest in the real estate consisting of land and improvements, free and clear of encumbrances. Equipment and all personal property are excluded from the appraisal.

A personal inspection of the property was made and all factors affecting value were investigated and analyzed.

My report consists of:

1. This letter of transmittal which identifies the property.
2. A section containing an estimate of value, a description of the property, a presentation of the valuation procedures and a conclusion of value.



**APPRAISAL SERVICES**  
Jack Ruth

John M. Ruth, Jr.  
634 Primrose Street, Haverhill, MA  
372-3716 Bus. • 372-2310 Res.

U. S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Agronomic Interpretations  
June 1980

### Capability Unit 11e3

#### Description

These gently sloping soils are loamy and crumble easily to a depth of two or three feet. Below these depths, these soils are loamy or sandy and crumble easily or are loose. Water moves easily through these soils. They hold enough water to enable plants to tolerate short periods of drought. The water table is below five feet throughout the year. These soils have few or no stones on the surface.

#### Limitation

Erosion is the main hazard for the use and management of these soils.

#### Crop Use

These soils are suited to most crops grown in the area. Farming on the contour or across the slope, terraces, stripcropping, crop rotations, cover crops, and conservation tillage are practices that help reduce erosion. Use of cover crops and incorporating grasses and legumes in the cropping system help to improve tilth. Mixing crop residues and manure into the surface layer improves tilth and increases water-holding capacity.

#### Forage Use

These soils are well suited to grasses and legumes for hay and pasture. Bluegrass grows well on these soils, but other forage grasses give higher yields. Alfalfa and red clover grow well and give the best yields. The main management objective should be the prevention of overgrazing that reduces the hardness and density of desirable plants, and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods, help maintain plant densities and reduce surface compaction.

#### Yields

The estimated yields that can be expected on these soils with good management and where conservation practices have been applied are:

- Silage corn, 20 to 26 tons per acre.
- Potatoes, 300 to 360 hundredweight per acre.
- Alfalfa-grass hay, 4.5 to 5.0 tons per acre.
- Clover-grass hay, 3.5 to 4.5 tons per acre.

#### The soils in this unit are:



3. An exhibit section which contains:
- A. Photographs
  - B. Plat (2)
  - C. Area Map
  - D. Street Map
  - E. Limiting Conditions and Certificate
  - F. Qualifications of the Appraiser



**APPRAISAL SERVICES**  
Jack Ruth

John M. Ruth, Jr.  
634 Primrose Street, Savannah, GA  
372-3715 Bus. & 372-3310 Res.

PART TWO  
ESTIMATE OF VALUE, DESCRIPTION,  
ANALYSIS AND CONCLUSIONS

ESTIMATE OF VALUE

In my opinion, the Fair Market Value of the vacant parcels of land located on South Hampton Road and Orchard Court, as of August 21, 1984 is:

Orchard Court: \$542,000

South Hampton Road: \$121,500



**APPRAISAL SERVICES**  
**Jack Ruth**

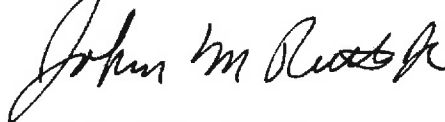
John M. Ruth, Jr.  
634 Primrose Street, Haverhill, MA  
372-3715 Bus. • 373-2310 Res.

After having taken all of these factors into consideration; having thoroughly inspected the property; having no present or future interest in the property; and based on my knowledge of the appraisal profession, I have determined the Fair Market Value of the subject property to be:

SOUTH HAMPTON ROAD	\$542,000
ORCHARD COURT	\$121,500
<hr/>	
TOTAL FAIR MARKET VALUE:	\$663,500

This appraisal, in its entirety, consists of fifty-eight pages.

Very truly yours,



JOHN M. RUTH, JR. CRA  
jmr/pr



**APPRAISAL SERVICES**  
Jack Ruth

John M. Ruth, Jr.  
634 Primrose Street, Haverhill, MA  
372-3715 Bus • 372-2310 Res.

U. S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Agronomic Interpretations  
June 1980

### Capability Unit VIIc23

#### Description

These nearly level to moderately sloping soils are sandy, loamy or silty. They crumble easily to depths of two or three feet. Water moves easily through this zone. Below these depths the soils are loamy, sandy or silty. Water moves easily through this zone in some soils and is restricted by a thick, firm layer in other soils. Stones on the surface severely limit cultivation and the use of equipment. These soils have a water table which is at or near the surface for most of the year.

#### Limitation

Stones on the surface are the major limitation for the use and management of these soils. Wetness is a secondary limitation.

#### Crop and Forage Use

These soils are poorly suited to cultivated crops, hay, or pasture. The stones on the surface and the wetness, preclude almost all use of machinery for planting or management.

#### Yields

These soils are not rated for production.

The soils in this unit are:

### Woodland Suitability Group 5w1

#### Woodland Suitability Group Description

In this group are very poorly drained, and poorly drained, non-stony and stony soils on slopes less than 8 percent. These soils have a poor productivity for woodland crops. They have serious limitations for use as woodlands, other than for protection, due to excessive wetness.

#### Management Problems and Hazards

There are severe problems due to very poor drainage, in the operation of equipment, particularly harvesting equipment. Seedling mortality and the windthrow hazard are severe problems. There are severe problems with plant competition on these soils with the exception of Brockton, Menlo, Swanton, and Whitman soils. On the soils named, plant competition is a moderate problem.

#### Management and Treatments

Cultural treatments (pruning, weeding, thinning) other than harvesting operations are not recommended. In harvesting, special precautions are needed due to the severe windthrow hazard. Only a light harvest cutting should be made, for example. Tree planting and site preparation for natural regeneration are impractical due to excessive wetness.

#### Suitability of Existing Trees and Trees to Plant

Trees preferred in naturally established stands are: White pine, red maple, white cedar, and hemlock. Tree planting is not recommended.

#### Protection

Firebreaks are impractical, but protection from grazing is desirable.

#### Productivity Potential

The site index is: 1/

White Pine	-	50-60
Red Maple	-	50-60

1/ Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

Soils in this Group are:

Woodland Suitability Group 3a4

Woodland Suitability Group Description

In this group are deep, well drained and moderately well drained, non-stony and stony, acid, slowly permeable soils. Slopes are less than 15 percent. These soils are among the most productive for woodland.

Management Problems and Hazards

These soils have slight limitations for woodland management except plant competition is a moderate problem when growing conifers.

Management and Treatments

The high productivity of these soils justifies intensive management for either hardwoods or conifers. Weeding and thinning are necessary for maximum productivity of quality sawtimber. Pruning is a desirable practice for white pine and red pine. Erosion is a moderate problem on slopes over 8 percent and care must be exercised in laying out woods roads and skid trails. Roads and trails need to be protected against erosion.

Suitability of Existing Trees and Trees to Plant

Trees to favor in management are: white pine, red oak, and hemlock.

Trees suitable for planting are: white pine, white spruce, and hemlock.

Protection

Protection from fire and grazing is necessary for high production.

Productivity Potential

The site index is: 1/

White Pine -	70-80 a/
Upland Oak -	65-75
Red Pine -	70-80 b/

1/ Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

a/ 60-70 on Paxton

b/ 60-70 on Paxton and Woodbridge

Soils in this Group are:

### Woodland Suitability Group 401

#### Woodland Suitability Group Description

In this group are deep, well drained and moderately well drained, non-stony and stony, sandy or gravelly, acid soils on slopes less than 15 percent. These soils have a fair productivity for woodland.

#### Management Problems and Hazards

These soils cause slight problems in woodland management. Plant competition is a moderate problem when growing conifers.

#### Management and Treatments

Management for either hardwoods or conifers is considered feasible. Weeding and thinning are desirable practices for the production of sawtimber. Pruning is desirable for white pine and red pine.

#### Suitability of Existing Trees and Trees to Plant

Trees to favor in management are: White pine, red oak, sugar maple, white ash, yellow birch, red pine and hemlock.

Trees suitable for planting are: White pine, white spruce, hemlock and Norway spruce.

#### Protection

Protection from fire and grazing is necessary for maximum production.

#### Productivity Potential

The site index is: 1/

White Pine	-	60-70
Red Pine	-	60-70
Upland Oak	-	55-65 <u>a/</u>
Northern Hardwoods	-	52-59

1/ Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

a/ 45-55 on Sudbury soils.

#### Soils in this Group are:

### Woodland Suitability Group 4x3

#### Woodland Suitability Group Description

In this group are deep, poorly drained, stony and very stony soils on less than 15 percent slopes. These soils have a fair productivity for hardwood or coniferous woodland.

#### Management Problems and Hazards

These soils pose serious problems due to wetness and stoniness. Use of equipment is severely limited by these two factors. Loss of tree seedlings is likely to be substantial due to poor drainage. Plant competition in managing both hardwoods and conifers is a moderate problem and a severe problem on Kendaia soils. Windthrow is a severe problem because of shallow root systems due to wetness. The windthrow hazard requires that special precautions be taken if considering a thinning operation. Planting, if done, will be limited to hand methods because of stoniness.

#### Management and Treatments

Management for the preferred species such as white pine, red maple, hemlock, etc., is possible, but limited. Weeding is of questionable value on these soils. Thinning, generally, is not recommended due to the windthrow hazard. Pruning of white pine may be desirable. Planting, generally, is not recommended. Planting should be confined to the higher mounds on these soils.

#### Suitability of Existing Trees and Trees to Plant

Trees to favor in existing woodlands are: White pine, red maple, white ash, yellow birch, and hemlock.

If planting is to be attempted at all, the most suitable species are: White pine, white spruce, white cedar, and hemlock.

#### Protection

Protection from grazing is desirable, but the installation of firebreaks is impractical.

#### Productivity Potential

The site index is: 1/	
White Pine	- 60-70
Upland Oak	- 55-65
Northern Hardwoods	- 52-59
Red Maple	- 60-70

1/ Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

Soils in this Group are:



U.S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Woodland Interpretations  
July 1980

### Woodland Suitability Group 4r3

#### Woodland Suitability Group Description

In this group are deep, well drained and moderately well drained, non-stony and stony, acid soils on slopes over 15 percent. These soils have a fair productivity for hardwood or coniferous woodland.

#### Management Problems and Hazards

There are moderate limitations for the operation of equipment on 15-35 percent slopes and severe limitations on slopes over 35 percent. Equipment operation on the steeper slopes may be hazardous and will be difficult on all the very stony soils. On 15-35 percent slopes, there is a slight erosion problem, but erosion becomes a moderate problem on slopes that are steeper than 35 percent. Installation of water bars or other protective measures on logging roads, skid trails, and other work areas is necessary to prevent excessive erosion. Plant competition poses a moderate problem when growing conifers.

#### Management and Treatments

Management for conifers or hardwoods is considered feasible. A release cutting in conifers will be necessary to overcome the problem of plant competition. Weeding and thinning are necessary for the production of quality sawtimber. Pruning is desirable for white pine.

#### Suitability of Existing Trees and Trees to Plant

Trees to favor in woodland management are: White pine, red pine, red oak, sugar maple, white ash, yellow birch, and hemlock.

Trees suitable for planting are: White pine, white spruce, and hemlock.

#### Protection

Protection from fire and grazing is necessary for maximum production.

#### Productivity Potential

The site index is: 1/

White Pine	-	60-70
Upland Oak	-	55-65
Northern Hardwoods	-	52-59
Red Pine	-	60-70

1/ Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

#### Soils in this Group are:

U.S. Department of Agriculture  
Soil Conservation Service  
Amherst, Massachusetts

Planning Guide Sheets  
Woodland Interpretations  
July 1980

### Woodland Suitability Group 403

#### Woodland Suitability Group Description

In this group are deep, well drained and moderately well drained, non-stony and stony, acid soils on slopes less than 15 percent. These soils have a fair productivity for woodland.

#### Management Problems and Hazards

These soils cause slight problems in woodland management. Plant competition is a moderate problem when growing conifers.

#### Management and Treatments

Management for either hardwoods or conifers is considered feasible. Weeding and thinning are desirable practices for the production of sawtimber. Pruning is desirable for white pine and red pine.

#### Suitability of Existing Trees and Trees to Plant

Trees to favor in management are: White pine, red oak, sugar maple, white ash, yellow birch, red pine, and hemlock.

Trees suitable for planting are: White pine, white spruce, and hemlock.

#### Protection

Protection from fire and grazing is necessary for maximum production.

#### Productivity Potential

The site index is: <sup>1/</sup>

White Pine	-	60-70
Upland Oak	-	55-65
Northern Hardwoods	-	52-59
Red Pine	-	60-70

<sup>1/</sup> Site Index is a measure of productivity that is expressed as height of dominant and co-dominant trees in fully stocked stands at age 50.

#### Soils in this Group are:

SH # 4

AMESBURY

3 OF 3

AMESBURY

S.H.

#4



100

**SPECIAL SYMBOLS FOR**

**WATER FEATURES**

Water is critical to the survival of the fish. The water must be clean, oxygenated, and at the right temperature. The water must also be free of toxins and other harmful substances. The water must be able to support the fish's respiratory system. The water must be able to support the fish's circulatory system. The water must be able to support the fish's excretory system. The water must be able to support the fish's reproductive system. The water must be able to support the fish's growth and development. The water must be able to support the fish's overall health and well-being.

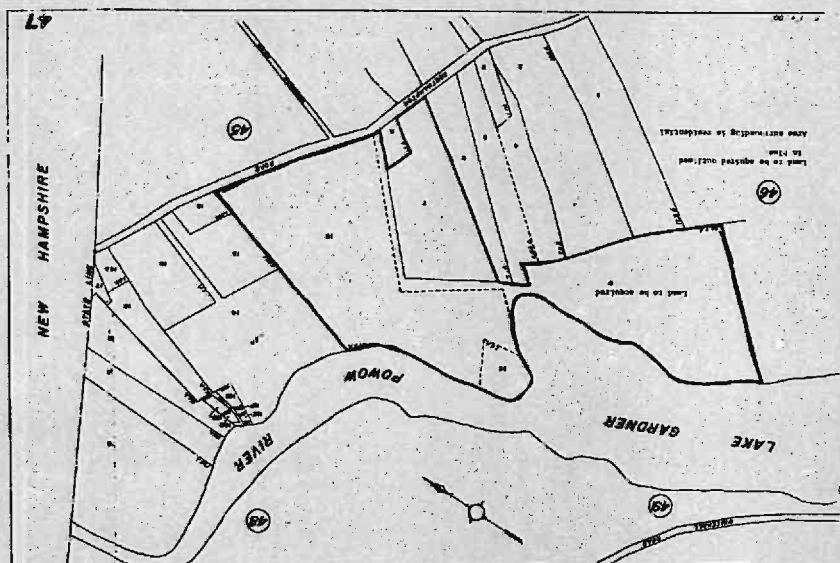
(continued from page 10)

[illegible]

1. LAMARCA'S WESTERN RELATIVES

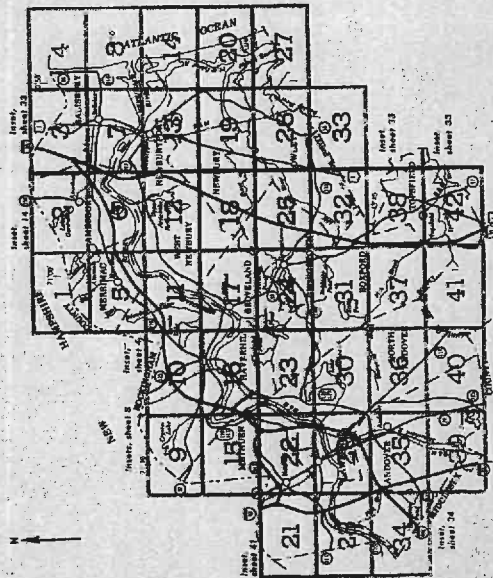
100











U. S. DEPARTMENT  
OF COMMERCE  
INDEX TO  
ESSEX COUNTY, M.  
NORTHERN  
SHEET 1  
1 1 1 1